HYGEIA

THE HEALTH MAGAZINE

Published by the American Medical Association
Edited by Morris Fishbein, M.D.

VOLUME 7 — MAY, 1929 — NUMBER 5

TABLE OF CONTENTS

COVER DESIGN
Edithe Lawson Swanson — PAGE

FRONTISPIECE—HEALTH ALMANAC 458
HOW IS YOUR BLOOD PRESSURE? 459
Norman B. Cole
YOU AND I AND THE X-RAY 461
C. Wadsworth Schwartz
UNUSUAL VEGETABLES—HOW TO PREPARE THEM 464
Lulu G. Graves
EXERCISE À LA MARYLAND 467
Weaver Pangburn
THIS BUSINESS OF SELLING BLOOD 470
Herbert G. Harlan
ARCHERY AFTER SEVENTY-FIVE 475
Z. Fuller
THE RUNABOUT CHILD AND HIS PROBLEMS—IX. HIS HABITS 477
Frank Howard Richardson
PAINFUL FEET 479
A. M. Rechtman
THE BABY'S LAMENT 483
Mary Sherburne Warren
BORN TO HEALTH AS WELL AS FAME 484
YOUR CITY AND YOUR HEALTH—II. OUT WITH CONTAGION 486
W. W. Bauer
SIMPLE LESSONS IN HUMAN ANATOMY—LESSON IV. CONT., THE SPECIAL MUSCLES 489
B. C. H. Harvey
DOES THE BABY TALK? 494

PAGE

A TOOTHBRUSH'S SOLILOQUY 496
H. D. Odell
GIVE THE DEAFENED MAN A CHANCE 497
Elizabeth Sargent
℞—BEHIND YOUR PRESCRIPTION 499
Norman Goldsmith
RIGHT CLOTHES FOR REST CURES 501
Paula Williford Colson
TUBERCULOUS PHYSICIANS AND THEIR CONTRIBUTIONS—TOBIAS SMOLLETT 504
J. A. Myers
A CRUSADE AGAINST MOTOR ACCIDENTS 507
PLAIN FACTS ABOUT HEALTH AND DISEASE:
The Summer Camp 508
The Hospitals of the United States 508
The President Exercises! 509
Shark Bite 510
WEIGHING IN SCHOOL 511
Jane Hufford
THE BUBBLING SPRING STARTS OUT TO SEE THE WORLD AND BE USEFUL 512
Ida Spaeth
HEALTH AND THE SCHOOL 514
Edited by J. Mace Andress
NEW BOOKS ON HEALTH 518
NEWS AND VIEWS 519
QUESTIONS AND ANSWERS 523

Contributors to This Issue

DR. NORMAN B. COLE'S article on the much discussed topic of high blood pressure was originally given as a radio address under the auspices of the Medico-Chirurgical Faculty of Maryland. The young science of radiology, as yet little understood by the public, receives clarification in the article by DR. C. WADSWORTH SCHWARTZ, who is a roentgenologist associated with a large New York institution.

LULU G. GRAVES is a consulting dietitian and author of many magazine articles on diet and nutrition. WEAVER PANGBURN is connected with the Playground and Recreation Association of America. HERBERT G. HARLAN writes from the University of Wisconsin. DR. Z. FULLER is enjoying leisure in California after an active life in medical practice.

DR. A. M. RECHTMAN is an eastern physician who devotes his time to orthopedics—the science of straightening crooked bones. DR. W. W. BAUER outlines clearly the duties of a health department from practical experience as a health officer. DR. B. C. H. HARVEY is a member of the anatomy department of a large university in the Middle West.

DR. JOHN A. GLASSBURG, author of "Overcoming Vicious Speech Habits" in the August, 1928, issue of HYGEIA, writes again on speech defects. ELIZABETH E. SARGENT is chairman of the committee on employment of the American Federation of Organizations for the Hard of Hearing. NORMAN GOLDSMITH, the son of an eastern physician, is a free-lance writer. Shortly after MRS. PAULA COLSON'S article was accepted for publication in HYGEIA, word was received from her husband, an army chaplain, that her long illness from tuberculosis had proved fatal.

JANE HUFFORD is with the Chicago Tuberculosis Institute. IDA SPAETH is a health worker in California. Other charming stories by her await publication.

Published monthly by the American Medical Association, 535 North Dearborn Street, Chicago. Subscription price $3 a year. Single copies 25 cents. Foreign subscriptions $3.50 a year.

Copyright, 1929, by the American Medical Association. All rights reserved.

Jenner

Metchnikoff

Nightingale

Lazear

Health Almanac

MAY, 1929

1 JAMES VAN ZANDT BLANEY, noted physician and chemist, one of the founders of Rush Medical College, was born, May 1, 1820, and died in 1874.

2 JESSE W. LAZEAR, of the U. S. Army Yellow Fever Commission, who died in the investigation, was born in Baltimore, May 2, 1866, and died, Sept. 26, 1900, in Cuba.

3 ABRAHAM GESNER, Canadian physician and geologist, who gave the name to kerosene, was born in Nova Scotia, May 3, 1797.

4 ROSWELL PARK, noted surgeon of Buffalo, medical historian, in charge of President McKinley after he was shot, was born, May 4, 1852, and died in 1914.

5 REGINALD HEBER FITZ, first to describe appendicitis and acute pancreatitis, was born at Chelsea, Mass., May 5, 1843, and died in 1919.

6 ABRAHAM JACOBI, father of American pediatrics, was born in Germany, May 6, 1830, and died in the house of Carl Schurz in New York in 1919.

7 NEVER HOLD ANY ONE by the button or the hand in order to be heard out; for if people are unwilling to hear you, you had better hold your tongue than them.—Chesterfield.

8 HE THAT FROM CHILDHOOD has made rising betimes familiar to him will not waste the best part of his life in drowsiness.—Locke.

9 DO NOT TRY to produce an ideal child; it would find no fitness in this world.—Herbert Spencer.

10 NATHAN'EL SCUDDER, physician, one of the founders of the first state medical societies in America, a leading spirit in the Revolution, was born, May 10, 1733.

11 I TAKE the true definition of exercise to be labor without weariness.—Samuel Johnson.

12 FLORENCE NIGHTINGALE, English nurse, founder of modern nursing, was born, May 12, 1820, and died in 1910.

13 UNLESS THE PEOPLE can be kept in total darkness, it is the wisest way for the advocates of truth to give them full light.—Whately.

14 FINDING MY HEAD grows weak nowadays, if I come to drink wine, and therefore hope that I shall leave it off of myself, which I pray God I could do.—Diary of Samuel Pepys, May 14, 1661.

15 ILIYA METCHNIKOFF, noted bacteriologist, Nobel prize winner in medicine, was born, May 15, 1845, and died in 1916.
DANIEL BRAINARD, chief founder of Rush Medical College and pioneer physician in the Middle West, was born, May 15, 1812, and died in 1866.

16 A FAST TRAIN can cross a grade crossing in seven seconds—and a car full of intoxicated tourists standing on the track lessens this time very little.

17 EDWARD JENNER, who discovered vaccination against smallpox, by which the world has been freed of the fear of this disease, was born, May 17 1749, and died in 1823. George A. Piersol, noted anatomist, was born in Philadelphia, May 17, 1856.

18 A FAT MAN enjoys one distinct advantage—he knows just where the ashes of his cigar are going to land.—Anon.

19 SHE WEARS a one piece dress of silk that's
purchased at some store,
And the doctor finds that's all there is—there
isn't any more.

20 FOR THE SAKE OF HEALTH, medicines are taken by weight and measure; so ought food to be, or by some similar rule.—Skelton.

21 THAT'S A GREAT NOTION people have about fixing up their blood when spring comes. They are very particular about their blood. They want to get it in good order. When mosquitoes get around they will regret what they have done.
—Danbury News Man.

22 THE WOMEN are going to have the tint of the finger nails match their clothes this spring. Wear black and save tinting.

23 THE BEST ADVICE for a man bored with life is to live on two dollars a day and earn it himself.

24 FOOD IMPROPERLY TAKEN not only produces original diseases, but affords those that are already engendered both matter and sustenance; so that, let the father of disease be what it may, intemperance is certainly its mother.—Burton.

25 GEORGE BERNARD SHAW says that ninety-nine per cent of him is like everybody else. The same old conceited Shaw!

26 JOHN ALLAN WYETH, noted surgeon and writer, founder of the first great postgraduate medical school in the United States, was born in Alabama, May 26, 1845, and died in New York, May 28, 1924.

27 JAMES NEWTON MATTHEWS, physician and "poet of the prairie," was born near Greencastle, Ind., May 27, 1852, and died at Mason, Ill., March 7, 1910.

28 NATHANIEL CHAPMAN, first president of the American Medical Association, founder of the American Journal of Medical Sciences, was born in Virginia, May 28, 1780, and died in 1853.

29 THOMAS ADDIS EMMET, one of the founders of modern gynecology, historian and Irish patriot, was born at Charlottesville, Va., May 29, 1828, and died in 1919.

30 THE FEMALE OF THE SPECIES is more credulous than the male.

31 WILLIAM WORRELL MAYO, pioneer surgeon of Minnesota, was born near Manchester, England, May 31, 1819, and died in Rochester, Minn., March 6, 1911.

M. F.

HOW IS YOUR Blood Pressure?

By Norman B. Cole

"THE subject of blood pressure is enjoying today what amounts almost to a vogue," says a recent book on the subject. "It has come prominently before the medical profession of late and has had to yield up some of its secrets under the searching light of investigation. World-wide reports of these researches are crowding the medical literature; physicians everywhere, possessed of this newer knowledge, are paying increased attention to blood pressure and to the disorders connected, in one way or another, with it.

"As a result, one finds what one might expect to find; namely, that the patient is impressed by the stressing of this subject, new to him, especially when he finds that blood pressure troubles are not rare after middle life. He looks at others of his own age about him and discovers, in conversation, that they, too, have been warned about their blood pressure. He even finds articles about blood pressure in the popular magazines. It finally becomes more or less common knowledge to him that the matter of blood pressure is somehow mixed up with many of the serious and fatal diseases of middle and later life, and he becomes disturbed about his condition and perhaps downright fearful because of this new medical bugbear."

Well, that's a sad state of affairs. In the first place, fear is a bad emotion; to go at anything with fear in his heart hampers a person. In the second place, blood pressure troubles are not new; the only new thing about them is that the public is beginning to understand them better and is doing its best to find out what is dangerous about them.

A common source of fear is the mistaken notion that all blood pressure is dangerous, when the truth is that blood pressure is as normal and necessary as food and sleep and exercise. There must be pressure of some

To Avoid High Blood Pressure

THE way you live and think now is going to have far more to do with your blood pressure fifty years from now than any amount of medicine you can take then. Moderation is the great word; moderation in eating, in smoking, in drinking (if you must drink at all), in any activities that worry you and tire you out; even moderation in exercise.

Be regular in eating and sleeping and bathing and elimination. In other words, practice good hygiene—which the reckless will scorn, of course, but which the wise-minded are coming more and more to heed.

If you have any doubt about the condition of your arteries or about your blood pressure, talk it over fully with your physician. Do this anyway if you are forty or over, and especially if there is in your family any history of high blood pressure, paralysis, heart trouble, kidney disease, or sick headaches; or if you are overweight, for the fat are more apt to have high blood pressure than thin folk are.

Rule fear and anxiety, especially about yourself, out of your life. If your blood pressure is just beginning to go above normal, don't be afraid, but adopt earnestly the hygienic measures your doctor advises looking toward prevention of a further rise. If you are older and already possess a bothersomely high pressure, remember that a quiet life and a contented mind will do more to drop your pressure to lower levels than all the medicine in the world.

kind in order to set in motion any liquid, whether it is water in a brook or blood in the body. The blood in the arteries and veins would not circulate if some pressure were not put upon it. A certain degree of blood pressure, then, is normal. It is only when that pressure becomes less than normal or greater than normal for one reason or another that any attention needs to be paid to it. As a matter of fact, this article is concerned only with blood pressure that is above the normal figure; doctors give it the name of hypertension.

I think the general fear of high blood pressure has come about in some such way as this: some friend is stricken suddenly with paralysis; or has a sudden attack of heart trouble, in which he may die; or is found to be suffering with Bright's disease; and the doctor finds that the blood pressure is high. Or perhaps some older member of the family grows forgetful and irritable and the doctor reports that there is hardening of the arteries, especially in the brain, and high blood pressure. This makes it appear that the condition of hypertension is getting common and that it is usually combined with some other serious condition that menaces health and even life. The papers talk about it and the patent medicine advertisements play it up. So, by a considerable number of persons high blood pressure is considered a new and terrible disease.

Easier to Prevent than to Cure

In the first place, it has already been said that high blood pressure is not a new thing; the public is merely learning more about it, and, of course, talking more about it. In the second place, it is not a disease in the same sense that pneumonia and rheumatism and measles are spoken of as diseases; but it is a condition, brought about through many years by a whole series of causes, some of which are known. It is more like wrinkles or flatfoot than it is like pneumonia. And, as in the case of wrinkles and flatfoot, it is simpler to prevent their occurrence in the first place than it is to cure them once they have occurred.

To understand something about how hypertension develops, it must be made clear how normal blood pressure is maintained. The heart pumps blood about seventy-two times a minute out into the big blood vessel, the aorta. This vessel soon divides into smaller vessels, and these in turn split up into still smaller ones, and finally there are tiny vessels, called capillaries, so small that the minute blood cells have just room to get through them in single file; "but they are so very numerous that if they were all combined into a single tube they would make a channel several hundred times the diameter of the large artery which leaves the heart" (Howell). The veins, which collect blood from the capillaries and return it to the heart, are of no concern in this connection.

Now, blood vessels are not rigid tubes, like water pipes, but are made of elastic living material which has the property, especially in the smaller branches and in the capillaries, of contracting and squeezing down on the blood passing through them. Normally, these little vessels are always exerting a certain amount of "squeeze" on the blood contained within them; so that, with the heart pumping blood into one end of the arterial system and with the capillaries squeezing down on the other end to prevent the blood from running out into the veins too rapidly, there is always a certain amount of pressure being exerted on the blood contained in and passing through the arteries.

This is what the doctor measures by means of the handy little cuff which he puts round your upper arm and blows up, while he reads the pressure on a dial. You may have noticed that he jots down two figures, above and below a line, like a fraction; the upper one is called the systolic pressure and represents the high point of pressure at the moment when the pulse wave goes by under the cuff; the lower one is called the diastolic pressure and represents that pressure that exists in the arteries between the heart beats. It is a mistake to think that the whole story is told by the systolic figure alone; to the doctor, the diastolic figure is often more important.

As a matter of fact, the whole story isn't told even when both systolic and diastolic figures are read, for the very good reason that these two figures are changing, in any one man, almost every minute during the day. There is more change in the systolic figure than in the diastolic, but both change. The blood pressure is meant to insure an efficient circulation.

Some of the Influences at Work

Now there are many factors influencing the circulation, such as sleep, muscular exercise, digestion, mental work, the condition of the heart and the emotional state. These or those muscles must have a little more blood; or the stomach, during digestion; or the brain. The proper capillaries in those organs must relax a little to let more blood through, and the other capillaries in the body must tighten up a bit in compensation.

The process is all very intricate and physicians don't know much about how it is accomplished, but they do know that the little muscles in the walls of the capillaries, which enable them to squeeze on the contained blood, are in turn tightened or relaxed through the action of nerves that run to them. And they know that there is one part of the brain that forms a telephone central for this part of the body's automatic control.

Furthermore, the emotions have fully as much to do with variations in blood pressure as does muscular activity. Fear and anger, especially, and anxiety and worry and impulsiveness—all these tend to send the blood pressure up. Smoking and a hearty meal both raise it. Rest, especially sleep, lowers it. So it goes all day long, the blood pressure rising and falling according to the varying needs of the body. It is a marvelous mechanism.

But this rise and fall, although definite enough to be demonstrated easily, is never in normal persons great. Remember that the blood vessel walls are made of elastic material and you will understand that they can bear a considerable increase of pressure temporarily. But suppose, now, that a person has been born with blood vessels of an inferior quality, in some way; perhaps there is a history of several cases of apoplexy in the family. Or suppose, on the other hand, that his nervous make-up is such that the swings in his blood pressure in response to the normal daily stimuli are greater than in the normal person. In one case the inferior vessel walls will be damaged before long by normal variations in blood pressure, and in the other case even normal vessel walls will be damaged eventually by abnormal pressure variations.

Here is the beginning of the changes which, going on slowly through the years, may lead at last to serious situations which force themselves on the person's attention and take him to the doctor. Then is discovered, perhaps, serious heart or kidney trouble, due no doubt to the long standing hypertension. By this time it is too late for the doctor to do all he would like to do for the patient. Isn't it better to catch this whole thing in the beginning and prevent it?

You and I and the X-Ray

By C. Wadsworth Schwartz

Underwood and Underwood

The x-ray room on the naval hospital ship Relief.

WHEN a person comes to the doctor for the first time for an x-ray examination he usually asks, "Will it hurt?" The physician can assure his patient that it will not, and as far as the patient is concerned it is an easy and not unpleasant procedure. Another question often asked the doctor is, "Do you really think you can find out what is the matter with me?"

Let me take a moment to tell you just what an x-ray examination is so that you may better understand what are its possibilities. It is not an open book for any one who looks to read. The x-ray does not produce pictures, but merely shadowgraphs, and it is only by the most careful study of the shadows by one who knows what he is looking at that information of value can be obtained.

If you try placing a number of your friends behind a sheet so that only their shadows are visible to you, you will probably be able to

Underwood and Underwood

GETTING INSIDE INFORMATION

THE FLUOROSCOPE offers the best method of getting an insight into the bodily organs. There is an x-ray machine behind the patient and the operator is observing the heart beat. In action the operator wears rubber goggles, gloves and apron to protect himself from continued exposure to the rays.

identify every one, but if you try it with strangers or with friends you don't know so well, you will not be able to identify any one. So with the x-ray shadows, as one becomes familiar with structures and their shadows, they are more and more easily identified; but then the story is only beginning, for abnormalities in the recognized shadows must be noted and interpreted in terms of disease. In other words, you cannot tell from the shadows seen on the sheet whether or not your friends need hair cuts or shaves. So you see it is not always easy to find what is wrong with one by the use of the x-ray, although today the roentgenologist can demonstrate nearly every organ of the body or obtain indirect information about it of a definite character.

You may well ask about x-ray burns. First let me say that the x-ray does not burn; it is not hot. It can, however, produce a skin reaction called dermatitis; this may be severe or mild, but it is not a burn. One need never fear such a skin change from an ordinary diagnostic process in the hands of a competent roentgenologist. Occasionally, however, during therapeutic procedures such a reaction may be produced purposely in order to influence some underlying structures.

I am called upon to make many examinations of the head and it is surprising how often cases of headache are due to unsuspected sinus trouble, which is readily demonstrated by the x-ray, or to impacted wisdom teeth. The fluoroscope reveals the shadows of the bodily organs at play, so to speak, and many of their discords can be recognized. In fact, the fluoroscope offers the best method of getting an insight into the organs.

Several of our internal organs are difficult to see under the fluoroscope but by filling them with some nonpoisonous material that is opaque to the x-ray their shadows become clearly visible and can be readily studied. Many persons who believe they are suffering from "nerves" are found to have stomach trouble, kidney stone, gallstones, or one of a dozen ailments that can readily be demonstrated and these persons are greatly benefited by being given proper treatment.

Throws Light on Ductless Glands

The x-ray also helps the endocrinologist arrive at a correct diagnosis. Endocrinology, or the study of ductless glands, is a branch of medicine that is growing in leaps and bounds and by careful study of the x-ray films of the head, chest and sometimes the abdomen a great deal of valuable information can be obtained that will throw a flood of light on the individual's endocrine problem.

Now the x-ray is not only used for diagnosis but is also used for treatment of many ailments. Many skin diseases clear up like magic under the administration of a dose of x-ray. Itching can frequently be controlled and some types of neuralgia respond well to x-ray treatment. Of course, the x-ray is used in the control of tumors, sharing this field with radium. The harder type of x-ray is similar to the ray of radium.

Sometimes the physician is anxious to administer a heavy dose of x-ray to some deep seated structure or to one just under the surface, and in order to get a heavy dose to affect the underlying disease, the skin is sometimes made to suffer. This only occasionally becomes necessary and is done only because it is the lesser of two evils; the skin reaction usually clears up readily afterward. Sometimes it results in a browning or tanning of the skin.

What the X-Ray Is

You may not be entirely clear on just what the x-ray is. It is a form of light of short wave length, so short that our eyes are totally unable to detect it; therefore, it is absolutely invisible. The ray in itself is not electrical, although it is produced electrically; hence you cannot get a shock from the x-ray. It was discovered accidentally in 1895 by Prof. Konrad Roentgen of Germany while he was experimenting with some vacuum tubes invented by Sir William Crookes of England. Professor Roentgen called it the x-ray because x is always the unknown factor in any equation and, of course, at that time and in fact until quite recently, the nature of the x-ray was a total mystery. Scientists knew nothing of its biologic effects and therefore did not realize the necessity to guard against its dangers, and as a result several men have lost their lives as martyrs to the science. But now science knows how to guard against this, so that its use is today no more dangerous than the use of any powerful medicine; however, it should be employed only by or under the direct supervision of a physician who is thoroughly familiar with its use.

Broccoli

Unusual Vegetables

How To Prepare Them

By

Lulu G. Graves

IF VARIETY is the spice of life it certainly must be the spice of menus. That this is true can be testified by every one who has winced under the same old regimen of potatoes, carrots, spinach and onions. Yet within the past few years there have appeared on our markets several vegetables that, if not new from an historical sense, are new to the American home table. Included in the group are broccoli, petsai (also known as Chinese cabbage, pak-choi or celery cabbage), globe artichokes, Jerusalem artichokes, cardoons, salsify (or oyster plant) and okra.

Some of these vegetables, such as broccoli, are recent importations. Others have been grown in this country for years but through poor methods of cooking have not been appreciated. Okra belongs in this class.

Broccoli New Only to Americans

When broccoli was introduced to the American restaurant, and so to the American home, a couple of years ago, it was hailed as a new vegetable. But nothing could be farther from the truth. As far back as the third century A.D., the epicurean Apicius discoursed on the subject of this vegetable. Four centuries later Drusus, son of the emperor Tiberius, was reprimanded severely by his father for having overeaten on the vegetable.

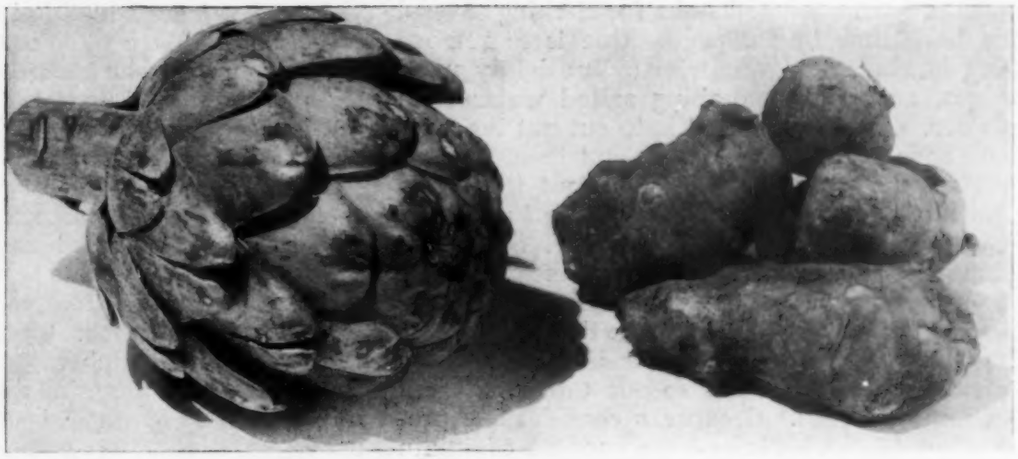
Broccoli belongs to the cabbage family and is similar in appearance to the cauliflower except that the heads are smaller and coarser and are yellowish green or purple. The leaves are more loosely arranged on the stem. As in all members of the cabbage family the water percentage is high. Its chief value is its ash and vitamin content, its contribution of bulk to the diet, and its distinctive flavor.

How to Prepare It

In preparing broccoli the whole plant, except large leaves, may be washed, boiled and served as greens. A better way, however, is to strip off the small leaves and boil them as greens. The stem should be scraped and the head left on. In cooking, the procedure is to bring a large amount of water, say six cups, to the boil, add 2 teaspoonfuls of salt and a pinch of soda. It should be cooked without a lid.

This method, if adhered to, will keep the acid products of the broccoli from destroying its fresh green color. It will also prevent the development of bad taste and odor, just as the cooking in a large amount of water will make the flavor of cabbage and other members of the cabbage family much better. Broccoli should be cooked only until tender; extra cooking will cause it to lose its fine texture, to turn dark and to develop a strong flavor; it should not be cooked in a steamer or pressure cooker. Also, it should not stand in cold water before cooking as this is apt to destroy some of the color and to cause the development of an unpleasant odor.

When the broccoli is done, it should be placed in a serving dish and melted butter poured over



The globe, or French, artichoke is shown at the left; the vegetables resembling potatoes are Jerusalem artichokes.

it or else served with Hollandaise sauce. Broccoli and globe artichokes are excellent foods from the standpoint of flavor. They are good to serve to any one who needs a diet rich in fat, such as is used for tuberculosis, diabetes and malnutrition. Not that they themselves provide fat, but the rich sauces that are served with them contain fat in a form that is enticing to the palate.

Ways to Use Sauerkraut

Another method of preparing cabbage that had a restricted use for a long time but has recently become a vogue is sauerkraut. It was introduced into this country by Germans, but its popularity suffered during the World War by its supposed origin; manufacturers tried to disguise it by calling it liberty cabbage. Now, the U. S. Department of Agriculture comes forward with the statement that it really is of Asiatic origin and was introduced to Europe by way of middle Europe.

Recent discoveries regarding its therapeutic value in digestive disorders and its vitamin content have given it a firm place once more. Dining cars serve it au naturel. High class restaurants serve sauerkraut juice cocktails. Another use is to mix it with gelatin dissolved in bouillon. It is poured into a pan and, when solid, is cut in cubes or fancy shapes and served with cold meat or meat salads. According to the manufacturers, vinegar should never be used with sauerkraut, lemon juice being preferred.

A vegetable with more than one alias is petsai, pak-choi, Chinese cabbage, celery cabbage. The market in which it is sold determines the name. This salad vegetable came to us from Chinese gardens. The head, which is the edible part, is from 10 to 16 inches long and is white or pale green; the head is erect, elongated and the leaves enclose each other in cabbage style. The outer leaves are usually boiled as one would cook cabbage; the cooking must be short because of the tenderness of the leaves. The inner leaves are used in place of lettuce in salads.

The globe (or French) artichoke is a vegetable that belies its beautiful appearance by belonging to the despised thistle family. It is comparatively new here but has been known in Europe for several hundred years. The edible part of the artichoke is the flowering head, which is gathered before the flower expands. The fleshy part of the calyx and the bases of the petals of the flower are eaten, the ends of the petals being discarded. Despite the apparent waste, investigators have found that the percentage of edible portion is as high as in green peas, squash and fresh lima beans.

When Selecting Globe Artichokes

In buying a globe artichoke, a housewife should select one that has a stem an inch or two long, as the stem helps keep it in good condition. It should be of a good green color and the scales tightly adhering; when the scales begin to spread and become discolored the vegetable is not so tender. The only place in the country in which the artichoke is grown in quantities is in a strip of land near San Francisco Bay in California. The first artichokes were planted there in the 1880's or 1890's, probably by Italian gardeners. Normally, the crop is ready in July, but by retarding the growth the development is often delayed until February when other green vegetables are off the market. The "heart" of the artichoke crop is now canned and in this form may be served the year around.

Many gourmets believe firmly that the only way to serve the globe artichoke is boiled and with melted butter or Hollandaise sauce. But for those with convictions not quite so firm, it might be well to mention that the artichoke may be stuffed, fried, used in soups and in salads. Dried artichokes are on the market but are not so good as the canned ones. Tiny artichoke buds are pickled or put up in oil and may be served as hors d'oeuvres or may be used to garnish a salad.

In preparing an artichoke for cooking several methods may be followed. One is to remove any blackened leaves, trim off unsightly petal edges, and cook in boiling salted water until tender. Another method is to cut out the stem and save it, trim the leaves, and then, holding the artichoke upside down, cut out the choke much as one would cut the stem out of a tomato. Or the globe may be cut in half, the choke removed, the stem replaced and the vegetable tied together with a string in such a way that the leaves will not fall apart. It is then boiled.

Although the artichoke has always been an aristocratic food, it is also one that is efficient in some diseases. Because a considerable proportion of the carbohydrate consists of inulin (a variety of starch), which is not converted into glucose in the body, the vegetable may be used freely in diabetic diets. Like broccoli it is advantageous in diets in which high fat content is desired as it is usually served with butter, Hollandaise or similar rich sauces. Although the water content is high, about 81 per cent, the protein content is higher than would be expected, it being between 2½ and 3 per cent of the edible portion.

The early history of the artichoke is shrouded in mystery, but learned men believe that it and the tall, prickly cardoon have a common ancestry and even that the artichoke may be a child of the cardoon, one that is cultivated for its buds rather than for its leaves.

Preparing Cardoons

The leaves of the cardoon may be 3 feet long; their midribs are the edible portion of the plant. In the young plant, the midrib is thick, fleshy, tender and crisp if properly cultivated and blanched. It is an Italian food, as is the artichoke, and is used in salads, stews, soups and as a separate vegetable. It may be served raw or cooked. To prepare it for cooking, the stalk is cut into sections or thin strips and cleaned thoroughly. It is boiled in slightly salted water until done, care being used to keep it covered with water to avoid darkening. When it is done, the vegetable is drained, freed from remaining strings and served with white sauce or melted butter. In buying cardoons, one should look for fulness of rib; the size and presence of spines are not of much importance.

The Jerusalem artichoke is in no way related to the globe artichoke, nor is it like it in appearance. It is a tuber of the sunflower family indigenous to Canada and northern United States. Obviously, its place name has no geographical meaning; it is, in fact a corruption of the Italian girasol, meaning sunflower. Sometimes this vegetable is called topinambour.

The Jerusalem artichoke may be cooked and served much as if it were a potato. It is first washed and peeled in water to which a little vinegar has been added to keep it from darkening. It should be cooked immediately in boiling salted water to which vinegar has been added. It may be served in white sauce or parsley butter or may be mashed like potatoes. The cooked artichokes may be sliced, dipped in fritter batter and fried; or the sliced raw vegetable may be soaked in acidulated water, then well drained and dried and fried in deep fat. Sometimes the vegetable is pickled or it may be eaten raw with salt, like radishes.

Bailey says that the tuber contains 14.7 per cent sugar, no starch but considerable inulin. This inulin is a material that is interesting the manufacturers of sugar, because of its proposed use as a source of levulose, which is much sweeter than sucrose. Inulin, when digested in warm acidified water, turns into levulose. The artichoke has many advantages as a producer of sweetening in that it will grow without much attention and will produce as much as 15 tons to the acre and even more. The tubers yield from 10 to 12 per cent of levulose. Whether we will ever see levulose on our tables instead of sugar is hard to predict.

Okra and Salsify

It is believed that okra (sometimes known by its Spanish name, gumbo) is a native of Africa and came to this country by way of the West Indies. The young green pods are the edible portion. The pods should be small; those more than 3 inches long are apt to be tough. They may be cooked whole or sliced. The stem end and the tip should be removed.

Okra is usually cooked in boiling salted water until tender; then drained and reheated in butter and a little cream in a saucepan. Or okra may be cooked in a casserole with tomatoes and chopped meat to make an unusual main-course dish. Any dish containing okra should be well seasoned. Used in gumbo soup, with chicken, it makes a famous Creole dish.

The pods do not contain a great deal of nutriment, only 8.5 per cent, including starch, sugar and proteins, but its delicate flavor and unusual consistency give it unique values.

Salsify, also known as oyster plant and vegetable oysters, is a long slender root that looks something like an elongated parsnip. It is scraped to prepare it for cooking, and then is boiled until tender. The vegetable may then be creamed, fried or baked, though at present it is most commonly used in soup. For baking, it is sliced, placed in a casserole, covered with thick white sauce and topped with buttered crumbs. It is left in the oven until browned.

Judicious searching in local markets will probably result in finding at least one of these vegetables. An occasional serving of them will tend to vary one's menus and will introduce the family to new gastronomic joys.

Exercise *à la* Maryland

By Weaver Pangburn

OCCASIONALLY in the news reels one sees pictures from abroad showing several thousand youths in great calisthenic drills. Watch them! Acres of bodies in faultless, ordered movements. What a spectacle! Are they happy; do they really enjoy it? I wonder.

In America we are rapidly throwing overboard these traditional, quiet, monotonous, deadly drills and substituting exciting, throbbing, joyous games. The theory is simple. Why not be natural, and why not have fun while you exercise? Why not enjoy your health building?

Pleasant Road to Physical Fitness

Maryland furnishes one of the best examples in the United States of the new and pleasant road to physical fitness. In each of the twenty-three counties, the school authorities strive at securing 100 per cent voluntary participation in athletics of the pupils from the fourth grade up. They bring the youthful athletes together by the thousands in great tournaments not to produce a show, though they are exciting enough to spectators, but rather to pass tests and compete in various sports.

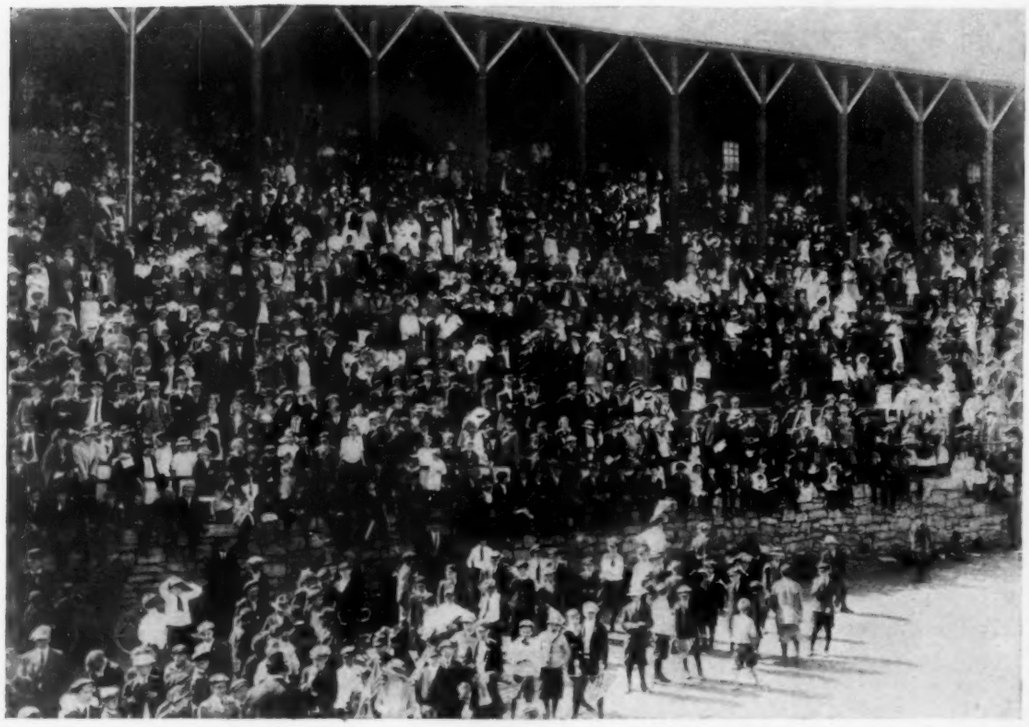
Allegany County provides a sample of what happens in each county during the spring. June 1, 1928, the Fairhope fairground near Cumberland, the county seat, was invaded by an army of more than 6,000 boys and girls. Tumbling out of busses, trains and family automobiles, they poured on the field in a milling, happy throng.

Half the children had come to take part; the other half, eliminated in home contests, were there to look on. Here, mingling with the city children, were youngsters from the mountain mining camps, their parents of substantial Welsh, Scotch and Irish stock. From three room village schools came boys and girls to compete with the products of the big schools of Cumberland and other cities.

First, 1,900 children entered the athletic badge tests. One thousand boys in groups of five ran the 60 yard dash and 900 girls undertook to make volley ball throws of 20 feet. Boys who ran the dash in 9 seconds or less and girls who threw the ball successfully in three trials received a ticket that entitled them to a badge.

Games of All Kinds

Meanwhile games of all kinds were being played. High school boys were playing speed ball, an adaptation of indoor baseball, and just as exciting. Five dodge ball games were in progress among grade school girls. Swiftly the ball was thrown and gracefully, alertly the line of youngsters in middies and bloomers wheeled, leaped and avoided it. Junior girls were playing hit ball, batting a volley ball with their hands but fielding it and running bases as in baseball. In front of the grandstand the greatest excitement prevailed over the senior high school girls' volley ball game. From partisans packed closely about came screams of delight when a point was made by their respective teams, followed by pained silence when a point was lost.



This crowd is not watching a horse race. It is interested in the athletic prowess of Maryland boys and girls at a great county tournament.

In the afternoon 900 boys took part in running contests, while the girls excitedly ran flag relays and obstacle races. Quickly the staff of twenty-five special workers and the local teachers ran off the meet, the entire program being completed between 9 and 3:30 o'clock.

Dr. William Burdick, the director of physical education in Maryland, whose staff directs county meets like that at Cumberland, is a volunteer; that is, he draws no salary from the state treasury. While giving a great deal of time to the state program, his salary is paid by the Playground Athletic League of Baltimore, of which he is the executive. Outside of Baltimore, there are only five physical directors in the state. But Dr. Burdick and his assistants have produced their leaders by training the grade school teachers. Thus 80 per cent of the school children of the commonwealth from the fourth grade up are regularly engaged in athletics. The remaining 20 per cent are not reached only because they live in remote mountain regions that are nearly inaccessible. Not only the white but the Negro children are included in this health-giving program and its benefits extend to the parochial as well as the public schools. And, mind you, it is voluntary, not compulsory.

The Badge Test

The recruiting medium for the Maryland athletic program is in the athletic badge tests sponsored by the Playground and Recreation Association of America and adapted to Maryland conditions. These tests of physical efficiency do not set up extraordinary goals of athletic achievement. They represent standards that normal boys and girls should attain. For boys, they include chinning, standing broad jump, running high jump and dashes; for girls, balancing, leg raising, trunk raising, volley ball service and dodge ball throw. Note the difference between the tests for boys and for girls. They recognize physiologic differences.

The tests are in three series, each progressively more difficult. A badge or medal awaits each boy and girl as he or she passes the test. The first two tests are taken at the home school, the third at the spring tournaments. In 1927, 32,000 Maryland children qualified in the badge tests and thousands more tried but, for the time being, failed. After a boy or girl has passed the third test, he or she begins to feel like an athlete and is inspired to go on with competitive games.

The State Tournament

Each June after the county tournaments a state tournament is held in Baltimore. From the four corners of the state come the contestants—children of the aloof and independent oystermen and mountaineers, city children, boys and girls from the farms. The tournaments are great mediums of acquaintance as well as competition. Out of 149 high schools, 137 actually entered teams in the 1927 state meet. Field and track events and minor games do not exhaust the program. Soccer is now played in all but ten high schools. The baseball tournament in 1927 involved ninety teams with 1,312 players representing all except four counties. A basketball tournament has recently been organized.

And to think that in 1732 the only relation of education to the games of the pupils in this state was "to watch the tendency to corruption of every collegiate member and to regulate the amusements and diversions of the youth so that they be not unedifying"!

Maryland is thus doing much to discourage what has been called "spectatoritis" in American sport, the tendency for thousands to gather in great stadiums to watch a few highly trained athletes perform. Against this vicarious method of enjoying sport, the Old Line State provides a system of mass athletics. It has not separated the school athlete from the rest of school life. Each pupil is led by the state program to serve the honor of his room, grade, school and county. The ideal of participation by all is held forth and in a large part realized. The star system is discouraged. The individual is not glorified. The result is that school superintendents are not talking about petty matters such as eligibility and protests and the letter of the law, but rather about the physiologic and ethical values of the sports chosen for competition.

These girls are captains of rival volley ball teams in Allegany County, Maryland. Their camera shyness disappears entirely during a game.

Curiously enough, the Maryland program is not focused primarily on health building. That comes as a by-product. It is based on an old-fashioned clause of the model school law of 1916 which reads, "In the elementary schools, good behavior, reading and spelling should be taught." Dr. Burdick of Baltimore has built the whole program on that good behavior objective. By influencing the emotions he seeks to affect the conduct of boys and girls, not just build up their bodies. To the doctor, the play field is a great medium of moral and health education. Team and group loyalty is promoted. So many different games and tests in which recognition can be obtained by the players are arranged that thousands have the sense of achievement, but they get no prizes or trophies of intrinsic value, just simple awards of medals or badges.

How is this broad athletic program affecting health conditions? Much research would be necessary to give an exact appraisal of the results, but a hint of the improvement is given in the following facts: In Baltimore County, where the program has been longest in operation, 42 per cent of the high school students are free from major medical or dental defects, while in the rest of the state the average is only 25 per cent. But the rapid improvement in the state at large is indicated by the fact that, since 1924-1925, the number of high school girls receiving health badges based on periodic examinations has increased from 19 to 25 per cent.

The social effects are conspicuous. "Sportsmanship is one of the outstanding effects of the program," says Edward F. Webb, superintendent of schools of Allegany County. In one of his bulletins to county superintendents, Dr. Burdick stated, "The leaders of athletics at the meeting of Farm Club Boys at the New York State camp last year stated that the boys in Maryland, who were selected from all over the state, stood out as the most social group from any state. They had more initiative and team spirit and a stronger group consciousness than any of the other boys."

The county and state athletic meets are also strengthening state and county solidarity. Mr. Webb says that nothing has so improved community spirit in his county as the athletic contests. The old bickerings and antagonisms between the county seat and other towns over school appropriations and other matters have practically disappeared.

Better health, better sportsmanship, better feeling between communities: this is a good record. Other states may well study the successful physical education policies of Maryland.

This Business of Selling Blood

By Herbert G. Harlan

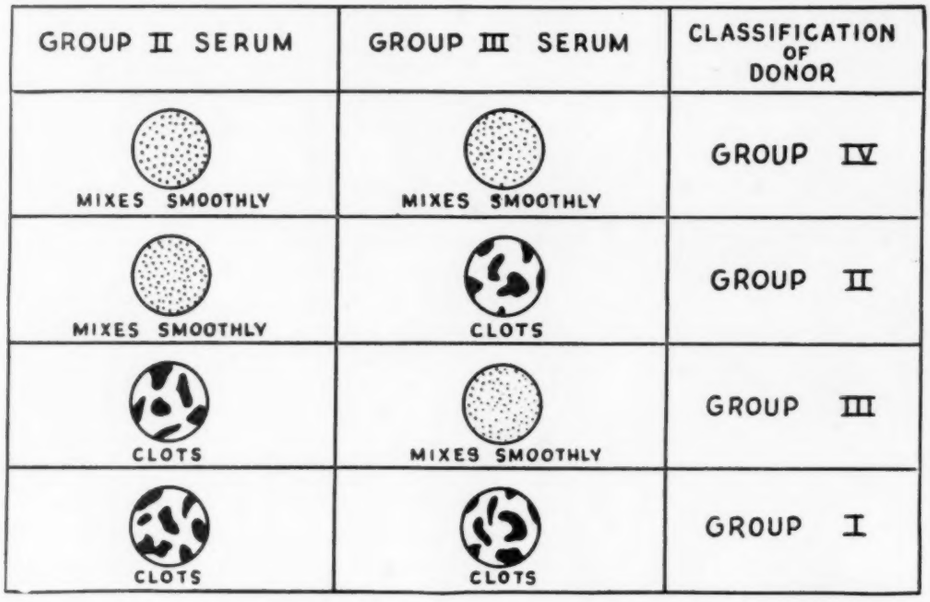


Fig. 1.—A diagram of the method by which the blood-seller is classified as belonging to one of four groups.

EVEN in this day of high civilization there are gallons of blood shed every day. But don't be alarmed, for you are not likely to be the next victim. On the contrary, there are persons who graciously pour out their blood in the interests of science; usually with them it is a mere matter of business. It is their unique way of providing bread and butter for the family table. Some of them are so successful in the business that it is not necessary for them to engage in any other wage-earning activity.

Professional Blood-Sellers

The professional blood-seller, or donor, does not lead a life of ease and luxury. He is paid well and in the larger cities can rely on a fairly steady income, but he must go through life with a sore arm and must submit to considerable discomfort. Nor can he eat anything that strikes his fancy. The man who makes a business of manufacturing and selling blood lives on a scientific diet of blood-producing foods. Eggs and fresh milk are his major infliction.

The professional donor may give as many as forty blood transfusions in one year. How much he receives in dollars and cents depends entirely on his location, but it is usually ample to provide himself with the necessities of life.

In the average sized city there are from 300 to 1,000 transfusions performed every year. Every transfusion means the transfer of from 200 to 700 cubic centimeters of blood from one human body to another. Since 500 cubic centimeters make, roughly speaking, one pint, the average transfusion results in the transfer of from one quarter to three quarters of a quart. In dollars and cents, this means an earning of from $20 to $50 for each transfusion.

In this business, as in all other businesses, there are amateurs. An advertisement in the local paper for a donor may strike an ambitious person as an extremely easy way to earn $25 or $50. He may go to the hospital and submit to the operation merely for the romance connected with it. He may regard himself as a hero; perhaps he has saved a human life. Little does he know that in nine cases out of ten the patient might have thrived without his sacrifice.

Transfusion Is Rarely Last Resort

Contrary to popular belief, blood transfusion is not given to the patient only as a last resort. There is usually no question of immediate life or death involved. The patient's hemoglobin estimation may be low; that is, the quantity of red blood cells in his body may have diminished for some reason or other. The hematopoietic, or blood-forming, function of the spleen or bone marrow may have deteriorated for some reason or other. In this condition the patient is not in danger of dying, but he has a better

chance to recover from his malady, whatever it is, if the missing blood cells are replaced. Since the unwell patient is not able to replace them himself, the healthy donor does it for him.

There is the added advantage to the patient of the stimulation to his own blood-producing organs offered by the presence of healthy blood cells from the donor. Not only does the patient receive new blood cells but he is able to manufacture blood cells of his own that he would not otherwise be able to produce.

The heroic element is thus removed from the majority of cases. The donor does not often actually save a human life. Yet the amateur or occasional donor derives a certain satisfaction from the knowledge that he has helped a brother back on the road to health. The recipient of this aid is often a total stranger to him; he will probably never see him again. But the donor retains a feeling in his heart that the patient is still beholden to him for his sacrifice, remunerative as it may have been.

Easy Money for College Students

This business of selling blood is more common among college and university students than it is among the people generally. They look upon it as an easy and quick way to realize cash. How will they explain that little scar on the arm to their parents? Perhaps it will not be noticed. If it is, it may be interpreted as the result of an accident. Some may even be brave enough to tell just where they got it.

Like all businesses, the business of blood-selling has its organization. I do not know of any professional donor's union, but within the hospital a complete record of each donor is kept. The date of each transfusion and the amount of blood given are recorded. Every donor is registered as belonging to one of four groups—1, 2, 3 or 4. The patient is also registered as having blood belonging to one of these groups. When a transfusion is necessary or advisable, a donor belonging to the same group as the patient is called in.

Determining the Donor's Blood Group

What is the principle, you may ask, of determining in which group a donor belongs? The actual method of determining this fact is simple.

The blood, in its relation to the transfusion, has two chief elements. It is composed of serum and blood cells. The serum is a whitish fluid in which the blood cells are suspended. The serum and red cells together make up the whole blood.

Both serum and cells have certain individual characteristics which make the blood of one person slightly different from that of another person. Were it not for this difference in the blood of individuals, it would not be necessary to cross-match the patient and the donor. Unfortunately, all blood is not alike and one man's blood may clot when mixed with another man's blood.

To facilitate the process of determining whether the bloods of two persons will mix smoothly, the groupings of the two bloods are first determined. Every person, as stated above, falls under one of the four standard groups. A donor belonging to group 1 can give blood only to patients belonging to group 1. A donor

Pacific and Atlantic

Fig. 2.—Blood transfusion is taking place. The donor is facing the camera.

belonging to group 2 can theoretically give to either patients belonging to group 1 or group 2. A group 3 donor can give to patients of groups 1, 2 and 3. A group 4 donor, known as the universal donor, can give to patients from any of the four groups.

That is the theory of grouping, but it does not always work out so simply. The blood of a group 2 donor will not always mix with the blood of a group 2 patient. The blood of a universal donor (group 4) will not always mix with any one's blood. The fact that there are exceptions to the rule makes it necessary for the patient and donor to be cross-matched before every transfusion.

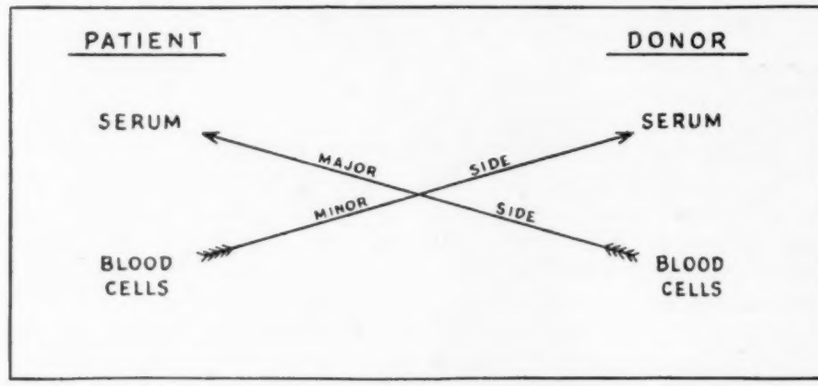


Fig. 3.—The method of cross-matching the blood of the patient and the blood of the donor to determine whether or not they will mix.

Grouping Is Great Time-Saver

The grouping system, however, saves a lot of time and trouble in the search for a good match. Though it does not establish that the blood of a group 2 donor will mix with the blood of a group 2 patient, it does establish definitely that the blood of a group 2 donor will not mix with the blood of a patient in a higher group—say 3 or 4. If a transfusion is necessary for a group 4 patient, it would be of no avail to call in a donor belonging to either 1, 2 or 3. Only the blood of a group 4 donor will do in that case. A donor can give to a patient in his own or a lower group but not to a patient in a group above him.

It takes only a few minutes for hospital attendants to determine in which group a person belongs, and the process of determining this fact has become standardized. Every hospital that finds it necessary to give blood transfusions always keeps a supply of group 2 and group 3 serum on hand. This serum, which is purchased from the large laboratories, has previously had the red blood cells removed through the centrifugalizing process.

When the prospective donor comes into the laboratory for the first time, nothing is known about the character of his blood. He may be a universal donor or he may be a group 1 donor. The question is to find out which he is.

A few drops of blood are taken from the new donor's ear. A drop of group 2 serum and a corresponding amount of group 3 serum, which was kept in the laboratory ice box, are placed side by side on a microscopic slide, as shown in figure 1. A drop of the new donor's blood is placed with these two specimens of serum, and the test is completed.

Figure 1 shows just how the donor's grouping is determined. If his blood mixes smoothly with both the group 2 and the group 3 serum, he obviously belongs to a higher group—group 4. If his blood mixes smoothly with the group 2 serum but clots with the group 3 serum, he obviously does not belong to group 3 or the higher group 4. Hence, he must belong to group 2. On the other hand, if his blood clots with the group 2 serum but mixes well with the group 3 serum, he belongs to group 3. There is only one other possible combination left. If his blood mixes with neither the group 2 serum nor the group 3 serum, he manifestly belongs to the lower group —group 1.

According to statistics gathered in various hospitals throughout the world, the percentage of persons falling under the four different groups is fairly constant. The actual figures for this are as follows:

10 per cent of persons in group 1
40 per cent of persons in group 2
7 per cent of persons in group 3
43 per cent of persons in group 4

The method of grouping described above is known as the Moss grouping system and is the common system in use today. There is also the Jansky system. A group 1 donor under the Jansky system would be a group 4 donor under the Moss system, and vice versa. The two middle groups are the same in both systems.

Now that the groupings of the patient and the donor have been determined, you may want to know just how it is learned whether or not the two bloods will mix. Theoretically they mix but practically they do not always.

Cross-Matching

The matching of the two individual bloods (cross-matching) is done in the laboratory, usually at the same time that the grouping is done. A person's grouping never changes throughout his life and may be determined once and for all as early as birth. The grouping, then, needs to be done only once but the cross-matching must be done every time.

Figure 2 illustrates how the bloods of the donor and patient are cross-matched. Two samples of blood are taken from the patient and donor. One of these samples from each of the persons to the transfusion is centrifuged, or clotted, so that the serum alone may be obtained. The other sample from each person is treated with citrate or with some other anti-coagulative to prevent it from clotting. Thus we have a sample of serum and a sample of blood cells from each person.

As shown in figure 3, the blood cells of the donor are then mixed with the serum of the patient. If there is no clotting, if the donor's cells suspend freely in the serum of the patient, the major side of the cross-matching process is successful. The patient's blood cells are next mixed with the serum of the donor. If there is no clotting here, the minor side of the match is also successful and there is a perfect cross-match.

Both Sides Need Not Match

If the major side (the mixing of the donor's cells with the patient's serum) is successful but the minor side (the mixing of the patient's cells with the donor's serum) is not successful, a transfusion is still possible. Though it is best for both sides to match, it is not absolutely necessary for the minor side to match. The major side, however, must match or the transfusion cannot take place. If the donor's cells clot in the patient's serum in the test tube, they will clot also in the patient's veins. But if the patient's cells clot in the donor's serum, it is not of such major importance, since only a small amount of the donor's serum (about one-half pint) goes into the veins of the patient, while the patient has about one half gallon of his own serum to dilute this foreign serum and counteract its clotting effect.

Perhaps you have asked yourself why, if a group 4 donor's blood will mix with a group 2 patient's blood, is it not possible to reverse the process and mix a group 2 donor's blood with a group 4 patient's blood? After all, you say, what difference does it make whether you mix the donor's blood with the patient's or the patient's with the donor's, just as long as the two are actually brought together? There is a big difference.

It must be remembered that only a small amount of the donor's blood (about one pint) is being mixed with a relatively large amount of the patient's blood (about one gallon). As figure 4 illustrates, it is not possible to reverse the process because of this difference in quantity. As long as the donor's blood cells will mix with the patient's serum, the transfusion is possible. But this does not mean that the patient's cells will mix with the donor's serum. A group 4 donor can theoretically give to any one because his cells will mix with all four types of serum. A group 4 donor cannot, however, receive from any one but another group 4 donor, for his serum will not mix with their cells.

Can't Reverse Process

Thus, in figure 3, a group 4 donor is giving blood to a group 2 patient. The donor's cells will mix with the patient's serum, but the donor's serum will not mix with the patient's cells. In other words, the major side matches but the minor side does not match. Yet, the transfusion can take place from 4 to 2 because not enough of the donor's serum gets into the patient's blood to do any harm.

If the process is reversed and if an attempt is made to transfuse from 2 to 4, the donor (now the recipient) has the greater quantity of serum and the patient (now the giver) has the less amount. The recipient's large volume of serum will seize on the giver's cells and force them into a clot. Thus, it is possible to mix a small amount of the donor's blood with a large amount of the patient's but not possible to mix a large amount of the donor's blood with a small amount of the patient's blood.

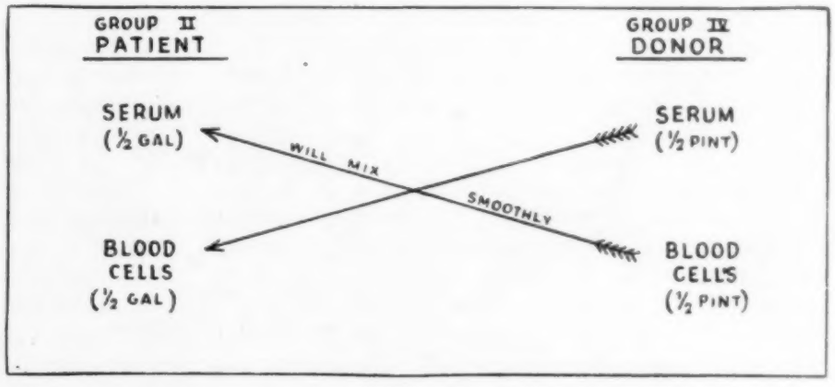


Fig. 4.—Why it is not possible for a group 2 donor to give blood to a group 4 patient, even though the reverse order is possible.

But notice that in the foregoing example the donor and the patient were of different groups. In this case, a perfect cross-match is never possible. That is, when the donor and patient are not in the same group, the minor side of the cross-matching process is never successful. When the order is reversed and the patient becomes the donor and the donor becomes the patient, the minor side changes to the major side, for the giver's cells must always mix with the recipient's serum (fig. 3). Thus, it is only

when there is a perfect cross-match that the two persons can give to each other, and there is a perfect cross-match only when the donor and patient belong to the same group.

After the grouping and cross-matching are done, how is the blood actually transferred from the donor to the patient? Here is where the business of selling blood meets with its greatest inconvenience for the donor.

There are two chief methods of transporting the blood from one human body to another. In the Percy method, an incision is made in the arm of the donor and a like incision made in the arm of the patient. A suitable vein is chosen in the arm of the donor and a tube inserted. A small quantity of liquid paraffin floating on top of the blood in the tube coats the side of the tube as the blood rises and keeps any air from coming into contact with the blood. The tube is then carried to the patient and inserted in his veins.

In the needle method, no incision is made in the donor. A needle, connected with a short rubber tube, is inserted in the donor's arm and the blood is allowed to flow out into a container. In the needle method it is necessary to mix an anticoagulative fluid (usually citrate) with the blood to keep it from clotting, whereas, with the Percy method, it is possible to use whole blood. Because of this fact, the Percy method is more widely used in the modern hospital.

But what about the after-effects on the patient and the donor? Rest assured, they are not as serious as one may believe. The patient obviously benefits from the operation, otherwise it would not take place. Nor does the donor suffer any serious effects; his arm is slightly tender for a few days and he is not up to his usual standard of endurance for a day or so. He is not weakened to the point at which he must be confined in bed or even to his room. It is an unusual case if the donor is not able to get up from the operating table and walk home, apparently none the worse for his contribution of blood.

But must the donor go through the remainder of his life with an insufficient supply of blood? Certainly not! He gets it all back, both in quantity and in quality, within a week or ten days. There is a certain amount of fluid taken from his body cavity and this must be replaced. He notices, if he submits to transfusions often, that his thirst is increased for a few days. It is nature's way of replacing this missing fluid.

The amateur blood-seller should not submit to a transfusion sooner than three or four months after his last sale. Only the professional, who lives on a scientific diet and keeps himself in almost perfect health, can stand such a drain on the system. The bone marrow, which manufactures and replaces the missing blood, like any other part of the human body, will not tolerate being overworked. If it is, it may lie down on the job altogether and the overworked donor runs a risk of developing tuberculosis.

For the Month of June

SEVERAL timely features for the June issue of HYGEIA can now be announced. They include:

VACATIONS À LA BERGSON
By Jesse Feiring Williams

HAY-FEVER AND ASTHMA
By Milton B. Cohen, M.D.

HAY-FEVER AND ASTHMA QUACKERY
By Arthur J. Cramp, M.D.

SUMMER OCCUPATIONS FOR THE CHILDREN
By John C. Baldwin, M.D.

Other helpful articles on personal health problems, sanitation, child training and bodily structure are scheduled, and there will be the usual sprightly department for the children.

Archery after Seventy-Five

By Z. Fuller

THE article about archery in HYGEIA a few months ago prompts me to offer some of my experiences with this ancient and charming sport as a health-promoting exercise and diversion.

As boy and youth my favorite sport was "shootin' a bow 'n' arrow." At the age of 75 years, I am shooting the English long bow with keen enjoyment; it is my favorite diversion.

When Golf Is Too Strenuous

Since my retirement from medical practice, because of age, my interests have been mostly sedentary, a change too radical from the many years of activity as a general practitioner. I needed more than I was getting of the good outdoors—physical exercise, active diversion. But my energy and endurance were limited because of age. The requirements of golf were too much for me; besides, golf didn't appeal to me. Likewise with other kinds of exercise and diversion, I needed something that would beguile me away from my easy chair and book habit, which was growing and besting me.

Fortunately, my boyhood interest in bow shooting had not wholly faded; I had read whatever had come my way about archery throughout the years and hoped that sometime I might get into the game again. Moreover, I am now living where this much neglected sport is popular and archery clubs quite numerous. I joined one of the clubs and this did much to stimulate my interest, as all confirmed archers are enthusiasts for the sport and more than willing to help any one who is interested. Under their guidance I was soon shooting with much enthusiasm and some skill.

I soon learned that the contest shooting of the clubs was too much for me; I had not the strength and endurance necessary for shooting consecutively ninety or more arrows, as is necessary in the "rounds" of the contests. So I fixed up a shooting range in the back yard of my home, and this has proved to be satisfactory. Conveniently, seductively near, it entices me away from my indoor interests several times a day to shoot a few arrows, the keen enjoyment of which, together with active exercise, outdoor air and relief from monotony, all make for wholesomeness and the keeping of life worth living, even at an age when too many find life drab and unsatisfactory. Thus I shoot until I become comfortably tired and then I resume my other interests, refreshed and with renewed fitness, zest and enjoyment.

Shooting Rovers

For variety I shoot rovers, a substitute for hunting but without game. Going into the country, I shoot on the roadside or other open spaces, at a bush, a bunch of weeds or grass, at various distances, estimation of which adds to the interest and makes for skill in shooting. It adds also to the benefit from exercise, necessi-

Going into the country, I shoot rovers, a substitute for hunting but without game.

tating as it does more walking than does target shooting, hunting for lost arrows being a considerable part of this game.

Just what constitutes the charm and fascination of archery? Doubtless some of it has come to us from far-off ancestors, for whom the bow decided largely whether they or their enemies were fittest to survive; whether they and theirs were to have food or go hungry. Such important matters doubtless get into our inheritance and stick. The primitive simplicity of the bow, to which our own effort provides the shooting power, has its appeal. The results that are possible from a weapon so simple also have a part, which together with our inherent desire for achievement—the challenge from a thing that is difficult and the thrill from success—make up most of the charm of archery.

Any one may learn in half an hour to shoot a bow—in a way; persisting, one may achieve a bull's eye occasionally, mostly by kindly luck. But to shoot with the sustained accuracy that is possible requires painstaking, persistent practice, with strict conformity to a simple but exacting technic, a mental concentration and fine coordination of mind and muscle not easy of attainment, yet challenging to the true sportsman. In trying this sport those who are lacking in willingness or ability for painstaking, persistent endeavor do not go far; they soon give up and quit, thereby missing much that is worth while and fine.

The skill and accuracy that is possible of attainment with the bow is remarkable. An archer friend of mine has been shooting more than fifty years, and now at the age of 65 hunts with the bow from preference, although a skilful rifleman. He has made the astonishing score of bagging three quail—California quail, smaller than bobwhite—with three consecutive arrows, at distances ranging from 20 to nearly 40 yards; a score that not many riflemen could achieve. He can't do as well as this every time he tries, of course; nevertheless it proves the possibility of the bow and helps to keep less skilful archers to their shooting.

The health-promoting value of archery will be inferred from the foregoing; it entices one outdoors; there is a good deal of active exercise required and enthusiasm and keen enjoyment do their wholesome service. The brief tenseness of nearly every muscle at the moment of loosing the arrow speeds up circulation of both blood and lymph and makes for good functioning of every organ and part, including the brain. Shooting a couple dozen arrows peps me up much as does a cup of strong coffee.

There is an esthetic feature worthy of mention; the grace of poise and the beauty of skilful movement in drawing the bow and loosing the arrow make a picture that is good to see, especially when the archer is a woman or girl. For archery is suitable for and is practiced by both sexes of all ages from early childhood to near decrepitude.

The equipment necessary for the practice of archery is not expensive; $25 or even less is sufficient for a beginner's outfit. If enthusiasm and skill develop there will come with these a desire for better equipment. But many archers—nearly all experts—make their own tackle and enjoy the work as a part of the game.

One may learn to shoot and to make tackle with the help that may be had from books on archery. One of the best and latest of these is "Archery," by Dr. Elmer, published by the Penn Publishing Company, Philadelphia; price $5. But personal instruction by a skilful archer is preferable, as a technic more or less faulty is likely to be acquired otherwise. Getting started right goes far to insure results that are satisfactory. Much help comes from membership in an archery club, seeing others shoot and studying their methods. Not least of such benefits is association with enthusiasts in this sport.

The Runabout Child and his Problems

By Frank Howard Richardson

IX. His Habits

THE physical life of the runabout child is important, and much space has been given to some of the outstanding factors that go to make up his healthy development. But the physical life is not the whole story, and no consideration of the problems of the runabout child would be complete that did not include within its purview mental and emotional development.

I cannot hope to encompass in a single article the various phases of this important subject. What I can do is to outline the general principles that should govern the parent in his approach to this task of helping his child to develop emotionally and intellectually, confident that when the parent gets the correct attitude he will at least not hinder if he cannot help.

Must Begin Habit Training Early

It has been said truly, in answer to the remark that habits are important to the mangement of life, that habits are life itself. If we parents can realize the truth of this statement, we shall give a new emphasis to the formation of correct habits in our runabout children. For one of the most generally accepted and profoundly held teachings of modern psychology is that the years preceding the sixth are those in which habit formation is accomplished with greatest permanence, and in which the set of the character of the man that is to be is formed, never to be fundamentally altered no matter what the experiences of the later years may be. The lesson in this for parents is obvious; for if they plant poor seed or no seed at all in these important formative years, they need not be surprised at the inevitable harvest.

The habit that gives parents (and their amateur, unasked advisers) more concern than any other single item in the education of their young children is that of obedience. As so much nonsense is talked about obedience, it will be worth our while looking for a moment at obedience in the light of the larger subject, discipline.

Should Not Ask Absolute Obedience

No parent who is honest with himself will deny that he would be highly gratified if he could say that his child always yielded instant obedience to his every command. In fact, we do sometimes hear parents boast of this state of affairs, albeit if we have previously watched the children about whom this claim for implicit obedience is made, we are likely to keep our tongues in our cheeks when the boast is repeated in our presence.

Granted that such a state of affairs would be highly tickling to the vanity of a parent, it would not be of the most benefit to the child. Why? Because children are by no means finished products; they are in training for independent manhood and womanhood, when they must learn to make decisions for themselves, decisions that may even involve the difficult and painful act of going directly against the wishes of their parents if the best interests of society are to be subserved.

The child who has always instantly obeyed the slightest beck and nod of a despotic parent (if such a child can be fancied to exist), has not been in training for independent existence. He has been trained to be a mechanical robot and nothing more.

Does this mean that the thoughtful, conscientious parent should not strive to get obedience from his child? By no means; for there are plenty of times when implicit obedience may have to be yielded for the avoidance of danger to the child or to others. But it is an interesting fact that the parent who has not put too much stress upon obedience as such—like the army officer who is not constantly talking discipline, trying his men by courts martial and filling the guardhouse and the unpleasant details with offenders—is the one who is most promptly and unhesitatingly obeyed when the order is given that must be complied with unhesitatingly. In other words, the habit that we should stress in the young child is the habit of cooperation, of obedience to the laws that we must all obey, rather than that of obedience to parental whim.

Bad for Child's Future

At first thought, this may sound like rank heresy to those easy chair theorists who do not have to check their conclusions by results. But those who are constantly dealing with children and who have the unpleasant necessity of delivering results that will stand careful scrutiny know that the bad old days of crushing initiative and pleasure in life by the exacting of slavish obedience have gone by forever. Just as wife-beating and slave-holding have been discarded in favor of a better order of family and economic life, so has corporal punishment as a means of enforcing the best discipline given way to reason and the development of intelligent, willing obedience. For let no parent who thinks the exaction of unthinking compliance with his whims the best brand of discipline lull himself into the fatuous belief that he is doing the best for his child's future. Obedience of the true sort is a rarer plant to cultivate than that. It calls for a higher type of self-restraint on the part of the parent; but its result is infinitely finer than the slavish cowering that comes only in response to force and that fails when the force is no longer forthcoming.

How about the habit of order? The child who is not on the road to the cultivation of this indispensable habit is indeed unfortunate, for without order life is without real meaning. But here again the longest way round is the shortest way home, for many of us number among our friends some of the most disorderly and unsystematic beings in the world, whose parents were what is frequently referred to admiringly as "the soul of order." What has happened in such cases? The mere iteration of demands for order, with no incentive of interest on the part of the child, brought obedience so long as obedience could be enforced. As soon as the child could get out from under the enforced orderliness, however, he swung to the other extreme with a sigh of relief; and the orderliness that was imposed upon him, but never cultivated within him, fell away like a garment.

Can habits of religion be enforced on a child of the runabout age? Unquestionably they can, especially if by religion we mean a formalistic conformance with some outward observance, such as Sabbath quiet or submission to a creed. But if by religion we mean something deeper, finer, fuller, something that will stay by the child in later years when the stresses of life call for help outside himself and beyond his mortal comprehension, we parents shall have to accomplish something a bit harder than merely repeating creeds and insisting on formal observances. We shall have to decide for ourselves what our religion means to us and then live it in such a way that the child will get the habits of religious observance in the only way that they are worth a fig; that is, as an outward observance of an inward something that defies definition. The only way that such habits can be instilled so that they become a part of the child is through the example of the parents.

Example Not Precept

This then is the sum and substance of the inculcation of habits in the runabout child—they can be instilled by example but not by precept. The father who slouches as he walks and sits need not expect an erect, soldierly son. He may be so fortunate as to have such a lad, but it will be in spite of his example. The lying mother need not expect a truthful child; truthfulness on the part of her boy and girl may come as a result of influences other than her own, but she cannot claim the credit for having inculcated it in him.

Habits the child will have; if not good ones, then bad. It is for us parents to say which kind they shall be, for there is no one who can influence our children as we ourselves can, until or unless we abrogate this position of primacy to some one who may prove worthier or more successful than we.

PAINFUL FEET

By A. M. Rechtman

THE foot is an important member of the body, a rugged machine when properly cared for but an exceedingly delicate mechanism when abused. Most of our foot troubles are avoidable if we give the feet the same care and attention we would give a piece of machinery from which we expect as much work.

The foot has two functions: it is a passive support, a pedestal, as it were; and it is a lever used to raise and propel the body. It is owing to its structure that its work can be easily and gracefully accomplished.

The foot is really a series of arches, the two most important of which are the long, or longitudinal, arch, which rests on the heel at one end and the ball of the foot at the other, and the anterior arch across the ball of the foot. There are twenty-six bones in the foot, and they are held together and supported by muscles, ligaments and fascia.

To make the arch mechanically strong the bones are wedge shaped. The arches of the foot are balanced and supported chiefly by muscles of the calf and not by the muscles of the foot itself. The tendons, which are the guy ropes of support, begin in the calf muscles and run to the foot, from heel to toe, and crosswise. When the guy ropes become weak, one has a weak or so-called flat foot, the first complaint being often a pain in the calf of the leg, because of the pull on the origin of the guy ropes; that is, the calf muscles.

In walking, the foot acts as a lever and the calf muscles as the force that raises the body and carries it forward. The foot is so built that at rest there is a general fixation of the joints and the body weight is supported with a minimum of muscular effort.

When conditions are normal, the foot centers under the leg to support the body weight with the least amount of strain and the greatest amount of comfort. If a line were drawn through the knee cap and the center of the ankle it would pass through the center of the foot and the second toe. Similarly, a line through the center of the knee behind, passes through the center of the ankle and the heel. This is demonstrated in figure 2. When the feet are in this relation to the legs they are parallel, the toes fall straight ahead and the gait is rhythmic and graceful.

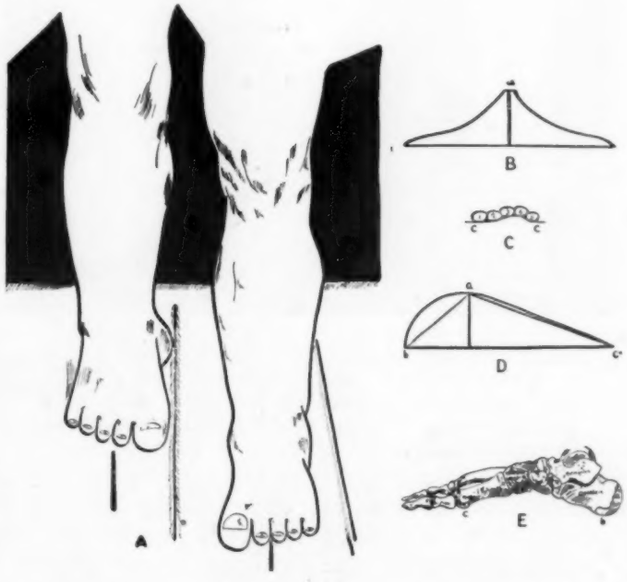


Fig. 1.—A, correct attitude in walking, with the feet parallel and the toes falling straight ahead; B, cross section of the arches of the opposed feet; C, anterior arch; D, longitudinal arch: (a) astragaloscaphoid junction; (b) inner tuberosity of os calcis; (c) head of the first metatarsal; E, bones of the foot, inner side, showing the longitudinal arch.

The two factors essential to walking are the construction of the foot and its musculature. If the foot construction is loose and its ligamentous support poor the muscles cannot act efficiently. On the other hand, if the muscles are weak the body weight cannot be properly raised or balanced. As a result, the foot assumes a faulty attitude, turns outward and bulges on the inner side. This always predisposes to an awkward posture or gait and also to pain, weakness and at times disability.

The foot may be likened to a suspension bridge, its bones and ligaments being analogous to the road-

way, the bones of the leg to the piers, and the muscles or guy ropes to the cables. If the road bed is poor the support of the piers and cables is not efficient; on the other hand, if the cables and piers are weak, even a good road bed cannot safely or properly carry the traffic. This analogy is pictured in the accompanying drawings.

The Weak Foot

Every weak foot, from the mildest to the most severe, has a similar deformity: The foot turns outward from its center position under the leg, bulges on the inner side, and the longitudinal arch is flattened. This results in strain and the body weight is borne by the muscles and ligaments instead of by the bones. Continued strain stretches these parts and weak or flat foot occurs, the most disabling of all foot discomforts. Any one who has experienced the condition can give testimony of its painfulness.

Every weak or flat foot is weak because of the change in relation between the power as supplied by the calf muscle and the fulcrum, and because the foot turns outward. In terms of the suspension bridge, the foot is weak because of the change in relation between the strength of the piers, the cables and road bed.

The term "flat foot," as commonly used, is a misnomer. A foot is flat only when the entire surface of the sole rests on the ground. Every degree of depression between the normal arch and the foot totally flat is properly spoken of as a weak foot. During the medical examination for the 1916 draft 10 per cent of the men examined were rejected because of weak feet. When the foot is weak the pressure of the body weight tends to break down or weaken the arches, causing discomfort or even pain in standing. The elasticity of the foot is lost and the gait is ungainly.

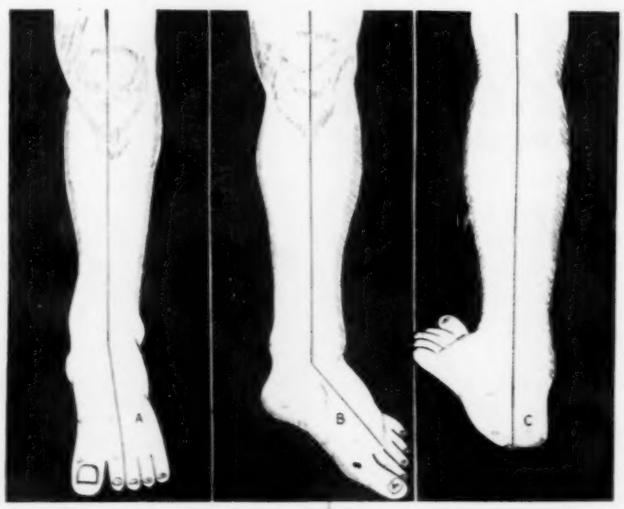


Fig. 2.—A, anterior view of the normal foot in its correct attitude; B, the normal foot, showing how voluntary abduction simulates the weak foot; C, posterior view of the normal foot in its correct attitude.

The flat foot appears to be broken in the middle and the fore part of the foot is depressed and turned outward, the posterior part inward. The center of the flat foot is the widest part, while in the normal foot it is the narrowest. What is normally the highest point in the arch may be on the ground and because of weight bearing may become calloused. The ligaments binding the bones together stretch and the relation of the bones of the foot to each other is altered.

There are four types of weak feet.

1. The foot with a normal arch and firm ligaments has muscle strain with a turning outward of the foot and a bulge on the inner side. This becomes marked before the arch is depressed. The prominent feature is the turning outward of the foot from the normal attitude in which the foot centers beneath the leg.

2. The foot of a person with an inherited low arch or one depressed because of weakness in childhood does not have as great a change in its relation to the leg. A flattening of the arch is the prominent deformity in these cases and one usually suffers no pain or disability. The inherited and symptomless flat foot is a weak foot in that elasticity and symmetry, as compared with the normal foot, are lacking from infancy.

3. In a foot of another type the ligaments are lax and on weight bearing the foot turns outward, but since the muscle control is efficient the foot appears normal when at rest.

4. The ligaments may be normal and the muscles weak. In these cases one suffers considerable pain before the deformity is noticed.

The arch of the weak foot may be normal in height, lowered or flat, or the deformity may appear on weight bearing or it may be continuously present. The deformity may be great and the patient suffer no pain, or there may be severe pain and little or no noticeable deformity. Figure 4 pictures the weak foot.

Strain is the most important cause of weak feet. Strain is the disproportion between the strength of the foot and the work it is called on to do, and it results in the breaking down of the architecture of the foot with accompanying deformity and discomfort. The strain occurs chiefly in one of two ways: either the load is too heavy for the support or there is general or local weakness whereby the foot is unable to support the body weight properly.

Important causes of weak feet are: (1) ill fitting shoes and stockings, because shoes that fit improperly make walking uncomfortable and result in a weakness of the muscles of the foot

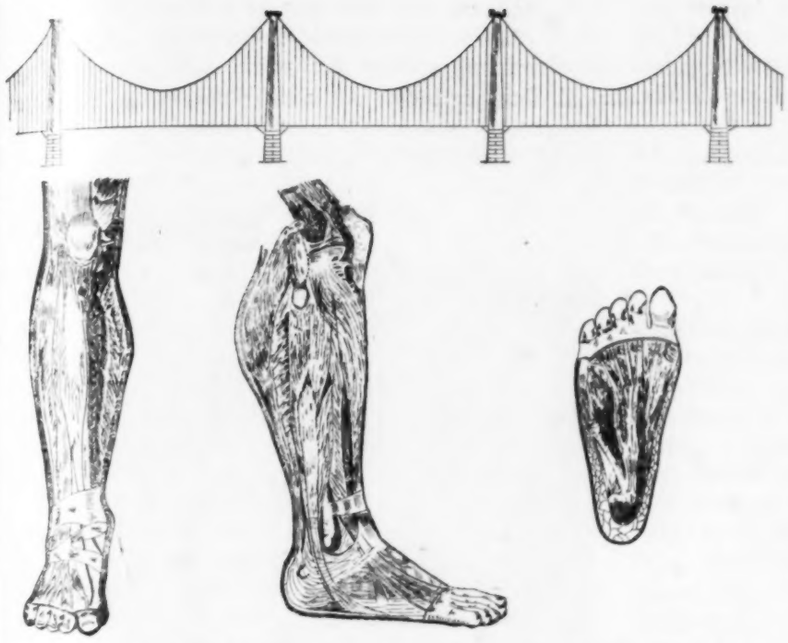


Fig. 3.—Note the similarity between the foot and a suspension bridge.

and leg; (2) occupations in which one must stand all day, such as housekeeping, cooking, waiting tables, selling, teaching, nursing and dentistry; (3) weakness after general ill health, a prolonged exhausting illness or the acute infectious diseases; (4) injuries of the foot; (5) obesity, and (6) malnutrition. The rachitic weak foot in children is a common example of the latter cause and is usually associated with other bony deformities such as bow legs or knock knees.

Early Symptoms

The early symptoms of weak feet are weakness, fatigue and strain on the inner side of the ankle, or pain in the calf, thigh or back, even after such slight exertion as standing. Later there is pain and discomfort in the foot itself, leading the patient to sit when he formerly stood and ride when he previously walked. Many mothers notice that their children have flattened arches, toe in (walk pigeon toed), turn the feet outward, or have a bulge on the inner side of the feet. Pain in the calf of the leg and in the heel is a frequent complaint, the former being due to strain on the origin of the muscles and the latter to jarring. Pain is due to strain and increasing deformity and not to improper use, as a foot already flat is often not painful.

Later the gait may become slouchy because the calf muscles are weakened so that they cannot properly lift the body in walking, the feet turn outward or are pushed one in front of the other resulting in a shuffling gait. The feet may be cold and numb because of impaired circulation. The weak foot usually perspires freely, tires readily, swells and aches, and the ankles are weak and turn often. The rhythm, poise and gracefulness of the normal gait in walking are lost.

The weak foot is recognized by its turning outward, the bulge on the inner side, the restricted motion and the weakness of the muscles. Early, there is pain in the calf, then in the ligaments, and finally in the bones. There is a general weakness as the support is insecure. Associated with this are awkwardness and often a general disturbance, as flat chest, round shoulders and curvature of the spine.

Local or constitutional diseases, occupation and improper shoes are the outstanding causes of weak feet. All weak feet are not painful and the degree of the deformity is not necessarily proportionate to the strain or injury. The foot with a high arch usually presents marked symptoms and is a recent case, whereas a flat foot is one present from childhood and is less amenable to treatment with hope of perfect cure.

The all important factor naturally is prevention. One is not born with a flat foot, although there may be an inherited tendency toward it. In children the condition is caused by overweight or by malnutrition. Artificial feeding in infancy tends to nutritional disturbances, the local manifestations of which are often in the bones, thus predisposing to weak feet. Practically all causes of weak feet in children are preventable except in the case of the sickly child. In adults, the woman of 40 or more is the most common sufferer. Weak feet are not a normal event, but result from repeated insults to the feet from neglect. Many women say "my shoe fits like a glove," but rather than being glovelike a shoe should be fitted for comfort and should allow for normal expansion, for circulation and for the work of the foot.

Selecting a Proper Shoe

Shoes should be chosen to suit the occasion. One should select a sensible, comfortable shoe for work about the house and for walking. A shoe may be proper and still be neat and attractive. The inner border of the foot is straight and the inner border of the shoe should also be straight. The fore part of the shoe should be sufficiently rounded so as not to crowd the toes.

The shank of the shoe—that is, the narrow part of the sole that flares in—should be narrow to conform to the arch of the foot. A shoe is

of proper length when the great toe joint rests in the seat of the shoe, which is that part in front of the shank provided for the ball of the foot. The heel of the foot should rest in the heel of the shoe, which should present a broad, weight-bearing surface. The foot bearing weight is a size larger than when at rest and in fitting the shoe this must be remembered. The stocking should not fit snugly, but should be sufficiently loose to allow freedom of motion and circulation.

One should bathe the feet every day and dry them thoroughly. The toe nails should be cut straight across to prevent ingrowing.

The principles of treating the weak foot are simple enough, but their application varies according to the complaints and to the degree of deformity. The aim in view is to make the weak foot conform to the normal in shape, attitude and muscular power. The weak foot needs support until the ligaments recontract and the muscles strengthen. The support must keep the foot in a normal attitude, centered under the leg, and must not restrict muscle action. Such a support is an active one and permits proper use of the foot, which gradually cures itself.

In mild cases a proper shoe is the first essential for correction. Raising the inner border from one eighth to three sixteenths of an inch throws the weight of the body to the outer side of the foot and so aids balance. A few simple exercises to strengthen the muscles and stretch

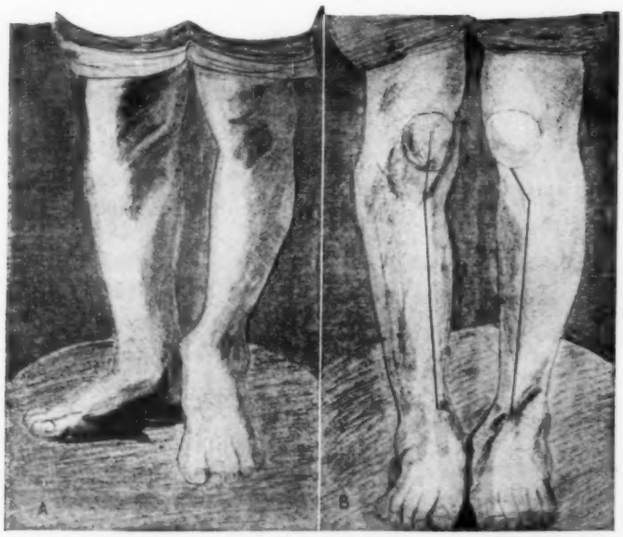


Fig. 4.—A, weak feet—the arches are not depressed but there is bulge and abduction; B, weak feet, showing the inward rotation of the legs when abducted feet are placed side by side, indicating a persistent attitude of abduction.

the contracted parts are valuable in effecting a cure.

The following exercises for weak feet are done with feet parallel or toeing in slightly:

1. Rise on the toes slowly and return to position. This strengthens the calf muscle, which is chief support of the arch.

2. Roll out on the ankle bones, so that the weight of the body is supported on the outer borders of the feet, and slowly return to posi-

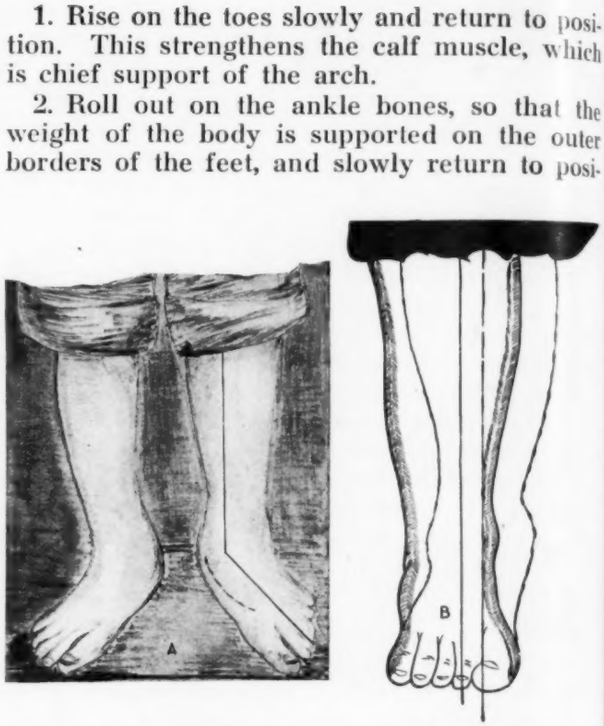


Fig. 5.—A, typical flat feet, showing abduction, bulge on the inner side and depression of the arch; B, normal foot shaded, attitude of weak foot in outline.

tion. This attitude overcorrects the arch and stretches the contracted tendons on the outer side of the feet, which aid in turning the feet out.

3. Slowly rise on the toes, then roll the ankles out and slowly return to position. This exercise is a combination of the previous two.

4. Walk along a line bearing the weight on the outer side of the feet, one foot before the other.

5. Pick up marbles with the toes.

These exercises should be performed for five or ten minutes at least three times a day. Bicycling is an excellent exercise but roller skating is harmful.

More marked cases require the same treatment as the milder ones. In addition, a support that corrects the outward rotation of the foot, the bulge on the inner side, and lastly the depressed arch is necessary. The support must not be so long as to splint the foot, as this would restrict motion and further weaken the part due to muscle disuse. Active use of the foot when it is held in the correct attitude is curative.

Even the painless weak foot requires care to prevent it from becoming painful. The attitude bespeaks strain and weakness, and correction is indicated before the onset of symptoms. Treatment will also prevent an increase of deformity and the general weakness and nervous irritability that can so often be traced to the foot as its source.

Tight and short shoes are responsible for many cases of painful feet, because they disturb function and eventually produce weakness and pain.

A corn is a protective covering and is nature's attempt to save the part from pressure. The cure is to remove the cause. By wearing a well fitting shoe, the condition corrects itself and does not recur.

Warts are usually found on the sole of the foot. They are sharply circumscribed and surrounded by a callus. When the upper layer is shaved off bleeding points are exposed. Pressure on the circumscribed area is usually excruciatingly painful. The treatment is removal or exposure to the x-ray.

Tired, swollen and aching feet find quick relief from a foot bath. Sweating and itching feet are greatly helped by salt water baths. The stockings should be changed daily and the shoes often. Cold feet are often caused by tight shoes and stockings. Relief may be obtained by massage starting above and rubbing downward.

A tight heel cord (present when the foot cannot be brought at least to a right angle), causes considerable strain and pull on the calf muscles. It is tiring and painful but can be relieved by elevating the heel of the shoe a half inch.

"Morton's toe" is the common name of a condition in which there is a sudden severe pain in the ball of the foot, usually between the fourth and fifth toes. It is due to the pinching of a nerve and is relieved by raising the ball of the foot with a pad or brace to separate the heads of the bones, thus relieving the pressure on the nerves.

A bunion is caused by a short shoe. It is a joint swelling, most often on the inner side of of the foot at the great toe joint. If the pressure continues, there is an overgrowth of bone beneath and an outward deflection of the toes. A properly fitted shoe is the first step in the treatment. If excess bone has formed and the part is painful, operative removal may be necessary.

The enjoyment of foot ease is obtained only by selecting the right shoe of the right size for the right need. The hygiene of the feet is also important, a daily bath, thorough drying of the feet and a daily change of stockings and frequent change of shoes constituting a good routine to follow.

When the strain is increased by occupation, illness or increased weight, one should protect the feet with proper supports. Exercises are then a great aid in restoring the normal muscle tone, so that supports may be discarded.

A BABY'S LAMENT

By

Mary Sherburne Warren

If only my mother had to—

—Eat this cold cereal. It got cold when she went to the door to speak to the ice man. She will think it's my teeth that makes me so fussy all the morning. Milk isn't enough for a child of my age, but I will not eat cold cereal. Mother had a nice hot breakfast; she's very particular about what she eats.

—Be broken of her rest. I was due in bed at 6 o'clock. Mother was kissing me good-night when in came Cousin Maude with her pet dog. "Oh, isn't she a darling!" cried Cousin. "Do let me see her." She took me in her lap and jumped me up and down, and the dog barked and I wished I could bark. Then they talked about the new tweed dresses in Corley's window, and it was 8 o'clock before I was back in my crib. I shall be fussy tomorrow to pay for it. Mother will think it's my teeth.

—Stay in a room without a thing to do. Mother thinks I ought to play with my doll, but I can't get her dress or shoes off, so there is nothing I can do with her. The cupboard is shut tight, and the secretary drawers are too heavy to open. It would be fun to pull off the sofa cushions and to hear the magazines go plop on the floor, but what's the use? I'd only get my hands slapped again. Mother's having a nice time sewing but I have nothing to do. I can fuss—that's one thing I can do. Mother will think it's my teeth.

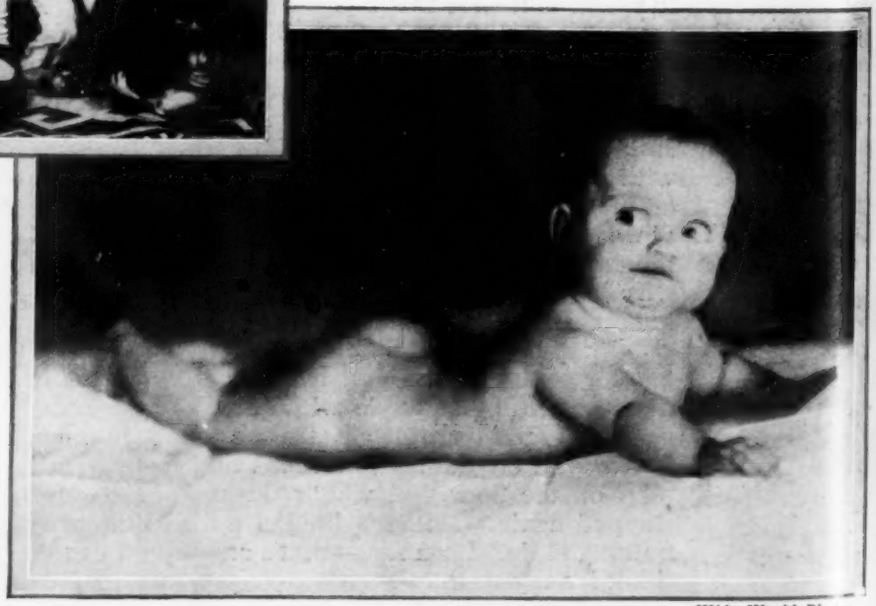
BORN TO HEALTH AS WELL AS FAME

Wide World Photos

Peggy-Ann Hoover and her grandmother, Mrs. Herbert Hoover, wife of the president.

Ewing Galloway

King Michael of Roumania, 7 year old sovereign.



Wide World Photos

Princess Ilona of Austria, gold medal winner in health exhibition held by the Hungarian National Society for Child Welfare at Budapest.

Wide World Photos

Princess Elizabeth of England, daughter of the Duke and Duchess of York.

Pacific and Atlantic

Bruno and Vittorio Mussolini, sons of the Italian dictator.

Wide World Photos

Princess Josephine Charlotte, daughter of the heir apparent to the throne of Belgium and the Princess Astrid of Sweden.

Your CITY *and Your* HEALTH

By
W. W. Bauer

II—Out with Contagion

The cost of caring for one case of diphtheria will protect 200 children against the disease. Protection of preschool children is important, because in them diphtheria is most serious.

IN A previous article I discussed the health of the child from the standpoint of general supervision and promotion of health habits and the correction of defects. Closely allied to this subject is that of control of the contagious diseases, which though not wholly confined to childhood are nevertheless most important during that period. The point of view in these articles is to be: What can I, a citizen, expect my city to do for me in the matter of health?

You Must Report Contagious Diseases

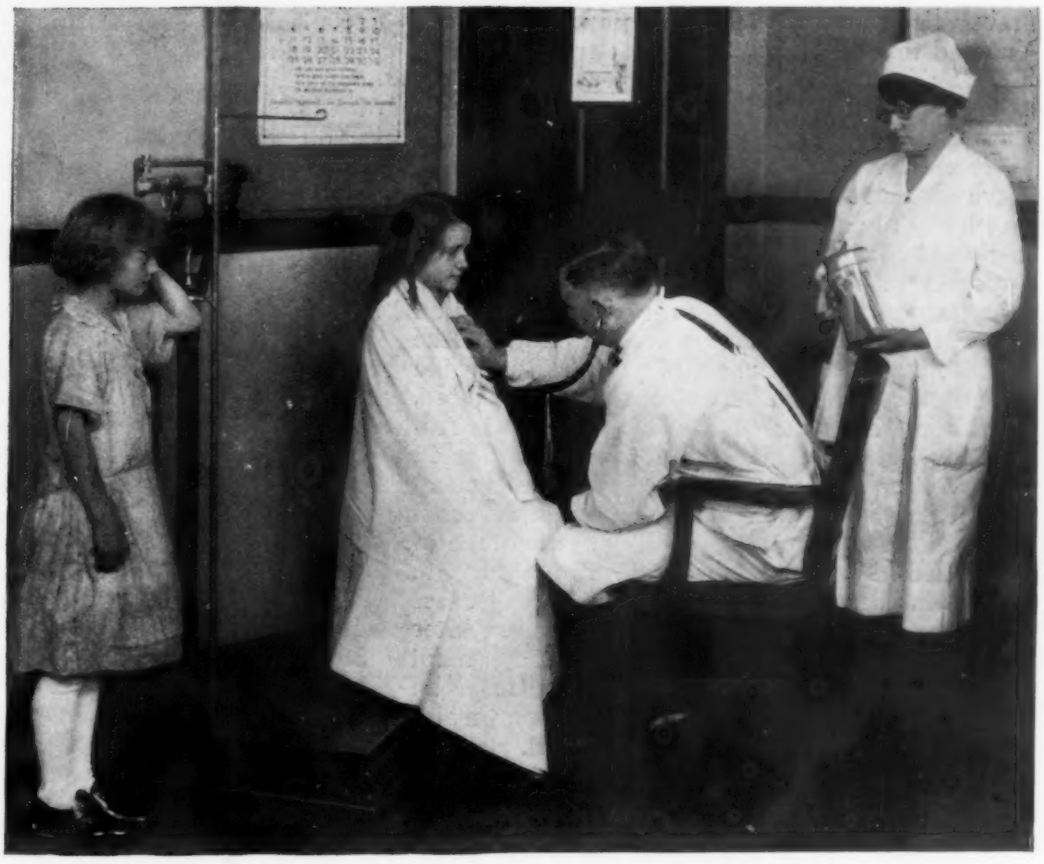
The contagious diseases comprise a large group which are spread from person to person through direct contact or through some intermediary such as food and water. The old idea of contagion by air has died a natural though not a peaceful death. The emphasis in this article is not so much on the means by which these diseases spread as on what you can rightfully demand of your community in the way of protection and what you must provide yourself. The answer is taken from the collective experience of almost 200 American cities, as compiled in the appraisal form published by the American Public Health Association as a means whereby health work in any city can be compared with the general practice in like matters.

The contagious diseases must be reported; that is the first essential. Though we are talking about what you have a right to expect of your community, the first thing I am going to tell you is what the community has a right to expect of you. Doctors are made responsible for reporting in most places, but citizens too have a responsibility. You cannot justify yourself if you know of unreported and unrestrained cases of contagious disease and fail to report them. If, then, when your own family is stricken, you use the unreported case as an argument why you should not be quarantined, you can scarcely blame the health authorities for watching to see that you obey the laws.

Quarantining the Patient

After the case is reported, you are entitled to prompt quarantine of the patient. More than that, you should demand control of those exposed to the disease, since these are obviously the ones most likely to be the next victims and consequently the next spreaders of the disease. Temporary isolation of these exposed persons is the most difficult part of contagious disease control, because they are well and are naturally resentful of restraint.

There are some features of contagious disease control about which you will never know



Children of tuberculous families should have careful examinations regularly.

unless you make it your business to find out. What investigations does your health department make to determine the source and the means of spread of these epidemic diseases? What does your health department know about where the milk comes from, how pure the water is, what the likelihood of exposure in the community or in neighboring communities? You have a right to know these things. You can see the public health nurses placing quarantine signs and calling to supervise the quarantine; you cannot see the study that your health department ought to be putting upon the progress of contagion in the community, unless you go down to the office to look around. You ought to see maps and charts showing when, where and how many cases of this, that and the other are in town. Your health officer ought to be able to tell you why conditions are as they are; he ought even to be able to predict with reasonable accuracy what you may anticipate in the next few months or a year.

Isolation Hospitals, Not Pesthouses

You ought to expect facilities for hospitalizing patients with contagious disease at the expense of the community regardless of their financial status, because hospitalization is the ideal method of quarantine and the best protection the community can have. You ought to see that your community provides a hospital for these patients and not a medieval pesthouse. You ought to resent the application of the term pesthouse to your isolation hospital, unless it applies, and then you ought to be ashamed for your part in permitting it to continue.

Preventing Epidemics

Control of the contagious diseases after they develop is important, but it is better still to prevent them. Your community ought to be active in bringing to the attention of the public and making available the latest proved methods for the prevention of epidemic diseases. Two features of the preventive policy must be insisted upon; these are smallpox vaccination and diphtheria prevention. In addition, health departments sometimes find it necessary to provide for protection by medical means against typhoid fever and against rabies, if necessary, and to keep alert as to other methods that may develop. Scarlet fever and whooping cough are two diseases in which a certain amount of protection may sometimes be had; your health department should be prepared for these.

It should be possible for you to go to your health department without appointment at certain regular hours every week to find out about any of the foregoing services. More than that, your health department should take into account the proverbial proneness of human nature to put things off and should carry a campaign of diphtheria and smallpox prevention into every school once a year. If you don't

have this going on in your community, you are entitled to ask why and to back up your question by pointing to the experience of almost 200 American cities and a good many counties.

One of the best safeguards against epidemics is eternal vigilance. Certain routine methods have been found to be effective in bringing promptly to attention the first manifestations of the contagious diseases. First of these is the presence of public health nurses in the schools. The purpose of these nurses is to keep contagion out of the schools by frequent inspections of the children. The inspection of your child by the school nurse should be welcomed, not resented, as is sometimes the case. This function is frequently combined with the nurses' duties in interpreting to the home the results of school physical examinations. Coupled with the school inspection is the policy of calling at the home of every child after a three days' absence, to ascertain the cause. Many contagious diseases are discovered and isolated in this way. After vacations every child may be inspected in school for suspicious signs of contagion and after an absence it is common policy to require a health certificate before readmission to school.

These precautions, carried out consistently, may occasionally annoy you, but in the long run they offer you wonderful protection. You should encourage them if you have them, demand them if you have not, and show your appreciation of them by cooperation. If your neighbors do not cooperate, there are more ways of letting them feel your disapproval than by reporting them to the health department.

Anonymous Telephone Calls Useless

Your health department should be ready to investigate the slightest suspicion of contagious disease as reported by you or any one else, provided only that the name of the reporting person is given. You can scarcely blame the health department for treating anonymous telephone calls as you would treat an unsigned letter. Properly conducted health departments demand names of reporting or complaining citizens but never reveal them. The reporting of contagious hazards is one of the few instances in which information lodged against a person or household cannot be stigmatized as tattling. The end in this case fully justifies the means.

You ought to have early warnings of epidemics; in fact, you should have more than that. You are quite right if you expect that your health department will issue regular bulletins of health conditions, with special reference to the contagious diseases and with information as to the safety of your milk and water supplies if there is any question as to these.

Tuberculosis is not usually regarded as a contagious disease, and yet that is exactly what it is. It is probably the most common of them, except the common cold. There are definite things that your community ought to be doing about this. Frequently this work is in the hands of a tuberculosis association which you support if you buy Christmas seals. It is very much your affair what this association is doing about tuberculosis. It ought to be making arrangements for suitable chest examinations. There should be public health nurses to visit the homes of tuberculosis patients who do not go to a sanatorium to keep these persons advised and encouraged and persistent on the road to recovery. The sanatorium itself should be provided by the community, usually the county, which means in most instances that the city is paying a large share of the taxes that maintain the institution. This should be a modern, cheerful place, well equipped and well managed. It should be popular in the community. If it is not, you have a legitimate interest in demanding to know why, because whether you have tuberculosis in your family or not, you want most of these cases in the sanatorium, where there is no danger of their infection being spread to you. Another protection against tuberculosis that your community should furnish is the open-air school for children of tuberculous parents or children with apparent tendencies toward that disease.

Clinics for Venereal Disease Diagnosis

Among the matters that modern frankness has brought into the light of day where it belongs, is the question of the venereal diseases. The protection against these that you have a right to expect from your community is the presence of those capable of diagnosing these diseases and treatment until the disease is noncontagious for those who cannot pay.

Finally, your health department should administer the laws and its own policies governing the contagious diseases without bias, fear, favor or prejudice in the interests of the community as a whole. And you should help toward that end by looking at every restriction imposed upon you from the point of view of your neighbor.

You have seen from the foregoing that the health department has—or should have—grown out of the police stage and into a stage of leadership in a community drive for better health. It has lost interest to some extent in its primitive clean-up functions, unless it can interpret them in terms of health values. It has turned its efforts to the saving of life and the preservation of health. Control of the communicable diseases is one of the most important expressions of this newer point of view. Your health department probably has this vision, as you will find if you take the trouble to get acquainted. If it hasn't, I don't know any more powerful influence to wake it up than the parents in the community.

SIMPLE LESSONS *in* *Human Anatomy*

By B. C. H. Harvey

LESSON IV, Cont.

The Special Muscles

SOMETIMES students talk of the action of a muscle. That is not sensible, because usually only a few of its many thousand fibers are in action at one time and no muscle ever acts alone. For example, when the finger muscles on the front of the forearm contract, they bend the fingers toward the palm. But some of the fibers of the finger muscles on the back of the forearm contract at the same time, even though these muscles are lengthening, and they tend to pull the fingers away from the palm. These fibers control and steady the motion and are called antagonists of the front muscles. The fingers move in the direction of the stronger pull.

A good example of the lengthening of a muscle while some of its fibers are contracting may be observed by resting the elbow on the table and holding a heavy book in the hand 9 or 10 inches above the table. Let the book slowly down till the hand is on the table. In doing this it can easily be noticed that only the biceps group is contracting, and yet the biceps is lengthening. Its antagonist, the muscle mass on the back of the upper arm, is passive. It does not work when gravity is doing its work for it.

All muscles have antagonists, and motion is always proportional to the difference in strength of the two pulls.

But most bones have many tendons attached to them, and they may all pull at once. The motion produced will be the result of the combination of all the pulls, the algebraic sum of many forces acting in different directions. All these muscles can and do act together. They are therefore synergists. The muscle making the strongest pull on a bone at any moment is called the prime mover for the motion of the moment. Antagonists and synergists join in to modify the motion.

Another little experiment will illustrate this fact. Hold the right hand and fingers out straight—all the fingers, the thumb and the palm in one vertical plane. Move the thumb so that it sticks straight up. See the thumb tendons tighten on the back of the hand. But something else is also happening. Compress with the left thumb and index fingers the little finger side of the wrist about an inch above the hand. Now lift the thumb as before. Two tendons on that side are tightening, one in front and one on the back of the wrist. What have they to do with thumb movements? They are holding the hand, so that when the thumb muscles pull the thumb the rest of the hand will not go along. We have learned to separate the thumb by this combination of pulls. The muscles of the little finger side of the wrist are evidently synergists with the thumb muscles. They modify the motion.

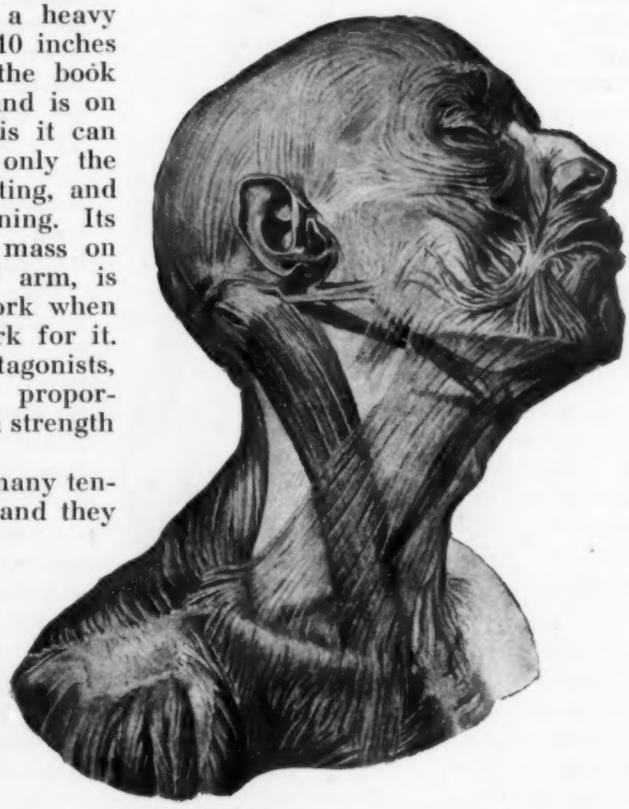


Fig. 25.—Muscles of facial expression. (From Braus.)

One other pull is always acting; namely, gravity. We have learned to make all our motions with gravity as a constant factor. If we could be suddenly transported to another planet on which the pull of gravity is different, we should have to learn all motions over again.

Still another way in which muscles constantly act is simply illustrated. If we

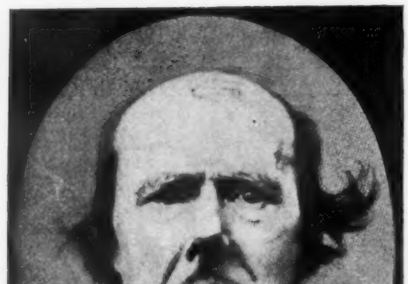


Fig. 26.—Electric stimulation of one facial muscle, showing the change in expression produced. (From Braus.)

grasp with the hands anything above our heads and pull down on it, the abdominal muscles contract forcibly. What have they to do with arm movements? They are holding the bones of the chest firm so that the shoulder muscles will have a firm base from which to act. This is called the action of fixation. When we are standing on our feet and doing work with the hands and the arms, all the muscles from the feet to the arms are engaged in this fixation.

Thus muscles act in four ways—as prime movers, antagonists, synergists and fixers, and in their combinations gravity is a factor always allowed for. We are usually expending more energy than we realize, for all movements are controlled and steadied. In carrying a saucer with a brimming cup of tea on it a distance of 10 feet, we do much more work than is indicated by weight multiplied by distance, especially if we do not spill the tea.

A few muscles may be especially mentioned in illustration of some interesting facts concerning the structure, action and history of muscles. The muscles of the face arise usually from bone or deep fascia and are inserted mainly into the skin. They produce the facial expression of emotions (figs. 25 and 26). They are in general much better developed in man than in other animals, but all vertebrates have some of them—even fishes have one around the mouth. Darwin has written a book on their form and function in vertebrate animals.

All of us have muscles that could move our ears in three directions, if they were not too feeble. Most quadrupeds excel us in this faculty. It is interesting that in the human fetus these facial muscles are not separate but are all connected together into one sheet. All are formed from gut muscle, which has come out to the surface; this is good evidence that our emotions came originally at least from our bodies rather than from our brains.

The eyeball has six muscles attached to it. Four rotate it up, down, right and left. Two roll it, top in and top out. The two eyes move together, and this means that the muscle on the lateral side of the right eye works with the one on the medial side of the left eye, and so on. The cooperation illustrates the combination of different and widely separated muscles to produce harmonious movement.

There is in the neck a skeletal muscle, the omohyoid (fig. 21), that has been given up to the service of the vascular system. The contraction of this muscle has for its main effect the prevention of depression of the deep fascia of the neck while drawing in a breath. By holding this fascia tense it performs a service for the blood circulation which will be explained later in this series.

Fig. 27.—Tendons on the back of the wrist, hand and fingers, showing the connecting bands. (From Braus.)

The flexor muscles of the fingers—that is, those on the palmar side—are somewhat shorter than the extensor muscles, or those on the back of the fingers. The result is that the resting position of the hand is one in which the fingers are flexed; they and the thumb are all turned toward the palm. This is true also of monkeys and in them the condition makes it easy to remain for hours suspended from the branches of trees.

The resting position of any part is of interest because in it there is least strain and repair of injuries may be expected to go on most rapidly. Thus the position of various parts of the body taken naturally in sleep is of considerable interest to surgeons and physicians. The resting position is, of course, not the best working position, and if any part is likely to be made immovable as the result of injury, the surgeon will not want to let it become fixed for the remainder of the patient's life in the position of rest.

The tendons on the back of the fingers do not need ligamentous tunnels because the

fingers cannot be bent backward. They are, however, in danger of slipping sideways over the knuckles when the fingers are flexed. Figure 27 shows one way in which such slipping is prevented. The tendons on the back of the hand are tied together sideways by bands.

There are six muscles whose tendons extend just past the wrist to the base of the hand. These muscles are of especial interest because they are the tool-using muscles. When tools are grasped by the fingers, thumb and palm, these six muscles move them. They are much better developed in man than in any other animal. The human animal is the only one that uses tools. He is also the only one to use the index finger separately from the other fingers. In man there are separate muscles that go only to this finger.

The muscles of the wall of the thorax and the abdomen consist of three layers. These form broad sheets of muscle. The fibers run in three directions (fig. 24). Such three-ply construction gives great strength to the body wall just as three-ply theater seats in which the grain of the wood runs in a different direction in each layer are strong. In case of a cut that goes through all the layers, the contraction of the muscle fibers in three directions prevents the persistence of a continuous opening through the muscular part of the abdominal wall. The tendons of these muscles constitute broad, flat membranes. They pass to the anterior middle line. There is no bone in this position in the abdomen as there is in the thorax. Its presence there would interfere with freedom of movement. The tendons must therefore find some other means of insertion which will permit the utmost mobility and yet be strong. The arrangement shown in figure 24 indicates how admirably these conditions are met by the interweaving of the fibers of these tendons into exceedingly tough fascias which extend from the lower margin of the thorax to the pelvic girdle. The movable fascias are their insertion.

It has been noted that the abdominal muscles hold the skeleton of the thorax rigid so that it constitutes a firm base for the action of the shoulder muscles. These muscles are also the most powerful agents for producing the bending and twisting movements of the trunk, which take place almost exclusively in the abdominal region and which are a part of nearly every form of heavy work. The fact that the muscles run in three directions enables at least one of them to act freely in any conceivable position in which the body may find itself. Their participation in activities of a wide range is apparent from the first instinctive action of a laborer or an athlete about to engage in any form of severe activity; he tightens his belt, knowing that the girth of the abdomen will be reduced when he begins to be active. That is brought about by the contraction of these muscles. In contracting they make pressure on the viscera within the abdomen. Abdominal pressure is greatly increased during general bodily activity.

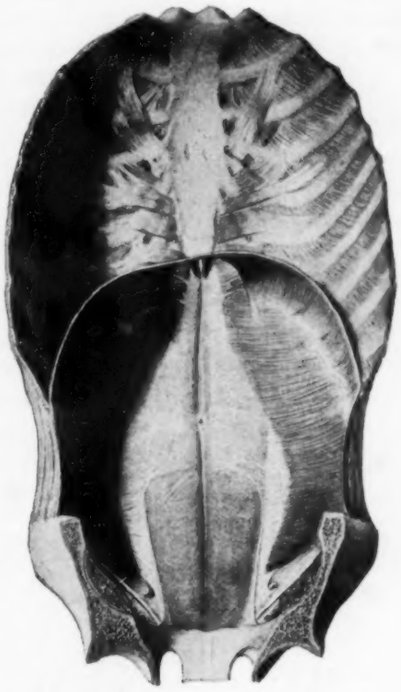


Fig. 28.—Anterior wall of thorax and abdomen, seen from behind, showing the anterior half of the diaphragm. (From Tandler.)

The innermost of these three layers is almost entirely absent from the thorax and from the neck. During development this layer moves down and constitutes the diaphragm (fig. 28). It is present only in mammals. Obviously it protects the heart and lungs lying above it in the thorax from the extremely high abdominal pressure that the great bodily activity of these animals produces. The diaphragm, acting along with the abdominal muscles, produces the highest possible abdominal pressure, a condition that is of great importance in man and mammals because it is an essential factor in the birth of the young. The position of the diaphragm in mammals protects the heart and lungs from the destructive effect of this great pressure. Without it the mammals would necessarily be less active and their young could not be born.

When We Sneeze

In sneezing there is an interesting cooperation between the muscles of the abdominal wall and those of the larynx. The latter close the larynx and the former increase the pressure on the abdomen and also on the lungs, the diaphragm being passive. Suddenly the larynx is opened and the air is expelled from the lungs with great force.

All of these muscles are ordinarily used in movements that are under the control of the will. But sneezing is involuntary. This instance is a good illustration of the fact that it is not right to speak of voluntary muscles, as is sometimes done. It is movement that is voluntary or involuntary. The same muscles may be used in both kinds of movement.

The pyramidalis muscle (fig. 24) is an interesting structure. It seems to be a heritage from our ancestors. In the opossum and its relatives, this muscle is attached to a bone that extends upward outside the pouch in which these animals hold their immature young. The contraction of the muscle serves to open the pouch. In man its contraction does not serve any definite function. It appears to be a vestige and like vestigial structures, which are disappearing in the course of evolution, it is extremely variable in size and extent.

The Most Efficient Muscles

The human animal is prone to regard itself as a paragon, superior to all the others. The truth is, however, that except in his brain he is excelled in nearly every tissue and structure by some animal. The animals that possess long striped muscles far superior to our best ones are the lowly insects. The wing muscles of bees are able to contract five times as often as our muscles and with a force and persistence in proportion to their mass that far exceed the capacity of any mammalian muscle.

All the skeletal muscles of the body wall begin as little masses of fibers which lie next the vertebral column. There are, when all are grown, thirty-five of them on each side; they are arranged like parallel rows of little bricks. From each a strip of muscle grows around the body to form part of the musculature of the body wall. The muscles of the limbs arise within the limbs as little masses of fibers. No muscle when it is first formed has any attachment; neither has it a tendon. As the muscle masses grow they move about, sometimes wandering to considerable distances from the places in which they first appear. Then after they have adjusted themselves to one another, so as to form a limb musculature of effective general shape and size, each mass becomes tendinous at the ends; the tendon extends the distance necessary to find its proper attachment. It becomes attached and settles down. Then its nerve grows to it and each muscle fiber receives at least one nerve fiber.

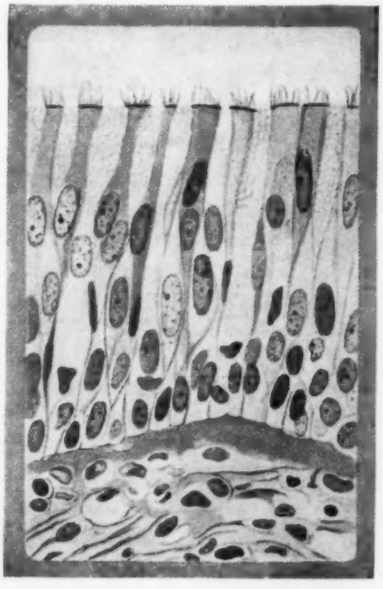


Fig. 29.—The membrane lining the human nose, showing cilia. Magnified 900 times. (From Bouin.)

The number of fibers in a baby muscle just formed is greater than the number of fibers in an adult muscle. About one third of the young fibers never develop into the long striped fibers of the adult muscle. No new fibers are formed after birth. The muscle fibers then existing live throughout the three score and ten years of human life. When a muscle grows bigger and stronger as a result of exercise it does so by increase in size of the fibers already present in it. New fibers are not formed. When the heart stops beating the muscle fibers die within a few hours: they become coagulated (rigor mortis). Tendon and fascia, however, are capable of living for long periods, even weeks after the heart stops. They may be removed from the body, stored up, and utilized by surgeons for the repair of tissues within other bodies during this time.

Andreas Vesalius (1514-1565), the father of anatomy.

The muscles composed of long striped fibers so far considered are concerned chiefly, though not exclusively, in voluntary motions. They are motions which we can see and of which we have good mental pictures. Muscles composed of the other kind of fibers are concerned with involuntary motions, or motions over which our wills have no control. These motions go on hidden in the interior of our bodies. We are usually unconscious of them and we have ordinarily no mental picture of them.

The Heart Muscle

Muscles composed of short striped fibers exist only in the heart. The fibers (fig. 14) are like those of skeletal muscle in the possession of transverse bands, but they differ in being short and branched and in communicating freely with each other, so that the heart musculature is one continuous mass of communicating fibers. Furthermore the fibers are joined end to end, a thing that never occurs with the skeletal fibers.

The fiber bundles run spirally round the heart so that in beating it empties its cavities by a sort of wringing out process. Many embryonic fibers or undeveloped ones are present; these can on occasion become fully developed and so the number of fibers may be increased. This explains the ability of the heart to grow much larger in disease conditions, which increase the demand on it. Often it becomes double its normal size.

The intestinal muscles are composed of short plain fibers. These fibers differ from all other muscles in the absence of transverse stripes. Furthermore, they are small. Long striped fibers are from 600 to 800 times longer than these and five or six times as thick. The fibers are threadlike, tapering at the ends. They are seldom attached to bone; usually their only attachment is to the connective tissue that permeates the muscle mass. They retain throughout life the power of dividing to form new fibers, so that, unlike the skeletal muscles, the fibers may be more numerous in the adult than in the child.

Muscle composed of these fibers is contained in the viscera and vessels. They make a large part of the wall of the intestine and of the arteries, of the bladder and the uterus. In the intestine these muscle fibers are so arranged as to form an outer layer of muscle with fibers running lengthwise of the gut and a separate inner layer made of fibers that run circularly around it. Contraction of the inner circular layer occurs in local areas and produces rings of constriction: these progress along the gut from above downward, thus forcing the content of the intestine to move along it. Then the outer layer of fibers running lengthwise contracting the intestinal wall is pulled up over the contained food mass. Plain muscle contracts deliberately and its contraction persists much longer than that of the long striped fibers in the skeletal muscles. Usually it does not mix with other kinds of muscle. But at the upper end of the gullet it passes over into skeletal muscle and the two kinds are intermingled at the meeting place.

The movements of swallowing are started by muscles made of long striped fibers under control of the will. It is continued by muscles made of short plain fibers not under the control of the will. So we can begin to swallow whenever we like, but having begun, we cannot stop.

What Makes Muscles Contract

Muscle fibers of all kinds can contract automatically. The fact is surprising but it has been conclusively proved by recent experiments with tissue cultures. Each variety of muscle has been kept alive outside the body immersed in a proper fluid in a laboratory incubator. Under these conditions each contracts rhythmically, without outside stimulus. Long striped muscle was long believed to contract only when an outside stimulus, such as an electric current or a nerve stimulus, was applied. Recently, however, Margaret Lewis of Baltimore has shown that isolated skeletal muscle contracts rhythmically about 120 times a minute under laboratory conditions without outside stimulus. This had long been known to be true of the other kinds of muscle fiber. Heart muscle contracts from 70 to 120 times per minute when isolated in the incubator, and the short plain fibers contract with a slower rhythm. Stimuli from the nervous system influence the activity of all of them, but they can and do contract without them.

The exact nature of the process is not yet fully understood, though so long familiar to us. It is not like any ordinary form of mechanical activity. There is reason to believe that change of surface tension at the surface of the fibrils is the controlling factor.

Other Forms of Motion

Though nearly all movement in the human body is produced by this curious process of muscle contraction, there are at least two forms of motion that are not due to it. One is the movement by which the scavenger cells of the connective tissues engulf bacteria and débris. They flow around such particles till they enclose them.

The other form of motion is illustrated by the movement of cilia. The interior of the nose and of the windpipe is lined by cells each of which has a number of fine processes projecting like the bristles of a brush into the cavity (fig. 29). These processes are called cilia, because they resemble hairs. They move all together with a wavelike motion which proceeds in definite directions and with a definite rhythm. It seems to be a forcible bending over of all the cilia as when the wind sweeps over a field of wheat. Afterward they return slowly to the resting position.

The effect is to move whatever lies on the surface toward the exterior. Considerable masses may thus be moved together with fluid and any bacteria that may have settled on the surface; thus the air passages are kept clean. The nature of the movement is not known, but it is powerful enough to move weights that are thousands of times heavier than that of the cilia upon which the weight is borne.

The mechanisms of movement in the human body are not yet fully understood: they are different from any with which we are familiar in the physical world, and they are very efficient. Much would be added to the resources of practical mechanics if they could be applied.

Girls usually talk a few months earlier than boys. Most children begin to talk between the ages of 1 and 2 years.

Does the Baby Talk?

By

John A. Glassburg

WHEN the baby reaches about the age of 2 years and does not talk the intelligent mother begins to worry; and justly so, for retarded speech is a two-edged sword. It may indicate a subnormal mentality or it may cause one. It is therefore important that the parents should know something about the normal development of speech.

We are born dumb as well as deaf and blind. Speech is not congenital or instinctive. It must be acquired by learning through imitation. The birth cry by which the child announces his safe arrival into this world is simply a respiratory reflex and it is not even heard by the new-born infant. Sometimes it is absent, especially in weak children. At other times it may be substituted by a sneeze, another respiratory reflex. The birth cry is not peculiar to mankind, for it is found in most animals as demonstrated by the bleat of the new-born lamb, the squeak of the new-born pig and the peep of the new-born chick.

The child is deaf at birth. This deafness is due to the absence of air in the middle ears. As breathing continues the air is forced through the eustachian tubes connecting the back of the nose and throat with the middle ears. Aeration of these ear cavities is established and the faculty of hearing develops. The sense of hearing becomes the most acute of all the senses the child possesses.

The Infant's Hearing and Vision

We are all acquainted with the "sh, hush and make no noise, the baby is sleeping." This warning is well warranted, for children react even more readily to sound than to light. A strong light held in front of a sleeping child may cause it to turn about but a loud noise will awaken it. In a study made at the Lying-In Hospital of New York City it was found that 276 children reacted to sound on the first day of life whereas only 146 reacted to light. The infant is so sensitive to sound that a loud report will cause fright and even convulsions.

The early sounds uttered by the child are those which are produced in response to hunger, cold, heat, pain, wetness, chafing and other external bodily irritations. At the end of the second month, there is another form of sound added, the laugh, a vocal response to a pleasurable external stimulus, as music. None of these sounds can be called speech, for speech implies a volitional or conscious act involving the deliberate use of the speech organs—the lips, tongue, teeth, palate and jaws. The utterances so far have been simply sounds produced by the vocal cords being set in vibration by the passage of the expired breath stream.

Before the child acquires articulate speech, it communicates with the world by its cry. Some authorities believe that the cry of the child has a distinctive character dependent on the cause. It has been described as short and choppy in pneumonia, hoarse in laryngitis, a moan in intestinal troubles, a weak whine in marasmus and a sharp scream in ear infections and inflammations of the brain. Other authorities attach no particular significance to the character of the cry.

Excessive crying is abnormal and indicates disease, external bodily irritation or a spoiled child but a little crying every day is good for the infant's development. Crying excites muscular exercise, which accelerates the bowel movements, and the deep breathing accompanying it expands the lungs and brings more oxygen into the system.

The First Speech Sounds

The child learns to speak by repeating the sounds he hears. Because the auditory apparatus lends itself to the perception of vowels more readily than to that of consonants, the early speech of the infant is made up mostly of vowel sounds. The easiest vowel is "a," for it requires simply a raising and lowering of the jaws and this is the first sound the infant produces.

At the end of the first year, most children are able to say "dada," "papa," "tata" and "mama." These utterances cannot be considered speech but accidental sound combinations. The sounds "d," "p," "t" and "m" are easily and practically involuntarily produced by raising and lowering the jaws. These consonants added to the vowel "a" produced in similar fashion give rise to the "dada," "mama," "tata" and "papa," which the parents interpret as speech.

The age at which the power of speech sets in varies. The upper limit of normalcy may be arbitrarily fixed at 3 years, with the average age of onset between 1 and 2 years. Girls are apt to talk a few months earlier than boys.

At the end of the second year a child should be able to speak in phrases of two to three words, as "baby eat," "baby go" and "baby bye-bye." After this the development of speech is rapid and at the end of the third year the child may have quite a vocabulary.

Sometimes speech is apt to develop at 3 years and even 4 years in otherwise perfectly normal children. When such is the case, the family history should be closely investigated for a late speech development in one of the parents. The normal mentality of these children is evident from their general behavior and reactions to mental tests.

Order of Speech Development

The first parts of speech that the child uses are the names of persons, as "mama, "papa" and "Tommy." Soon after he begins to use the names of objects as "ball," "hat" and "milk." He then will combine these two and say, "Mama ball" or "Tommy hat," indicating some relation between "mama" and "ball" and "Tommy" and "hat."

Then follow the verbs, as "Baby go bye-bye" and "Baby play." The adverbs, adjectives, conjunctions and prepositions follow. The last parts of speech the child acquires are the personal pronouns, as demonstrated by the fact that for a long time the child will say "Give baby the ball" instead of "Give me the ball."

The causes of delayed speech may be considered under two headings, central and peripheral. The central causes are diseases affecting the brain as aphasia, sleeping sickness, apoplexy, severe infections, the eruptive fevers of childhood and feeblemindedness. A child may cease to talk after a severe attack of scarlet fever. This is due to a temporary depression of the mental faculties. Sometimes a child makes an unusually rapid progress in speech after a severe illness of the brain. This is due to the increased irritability and activity of the cerebral centers.

The peripheral causes are deafness and sometimes paralysis of the tongue. Deafness is usually congenital, but I have seen cases in which a child could not hear because of hardened wax in the ear canal. When the mother states that at one time the child did talk but then stopped, the nose and throat should be carefully examined for enlarged adenoids, cleft palate, tumors of the back of the nose and throat and bands holding the tongue down to the muscles around the tonsils.

Most mental defectives have a speech defect. This may vary from mutism to defective speech production. Lalling, screaming, yelling, grunts and unintelligible sounds are found in the lower types.

Substitution of one sound for another and the utterance of sounds belonging to no known language give rise to a language belonging to the feebleminded and known as idioglossia, or tongue of the idiot. The interesting feature of

this idiot's tongue is that the same sound is consistently used to express the same idea.

Some mental defectives will repeat the questions put to them instead of giving the replies. They repeat without seeming to understand what they are saying. This echoing form of speech is scientifically known by the name of echolalia.

Another form of speech defect characteristic of mental deficiency is coprolalia, which consists in the use of filthy language. Suddenly without any apparent reason these children will burst out in torrents of vile and obscene words. This speech abnormality is also found in the insane.

Inability to talk may cause a child to appear mentally defective. If the tongue is held down by bands to the throat, if the palate is cleft or if there are obstructing adenoids in early life the child will not be able to talk without great effort. Repeated attempts at speech being futile, the child follows the line of least resistance, gives up trying and stops talking. The speech center in the brain and the speech pathways are not exercised and waste away from disuse, even as any muscle if not used will waste away. In such cases, speech education stimulates the vocal muscles and arouses the sleeping speech pathways and brain center, opening the closed avenue of communication and improving the mentality of the child.

The function of speech is part of the bodily properties and what affects the whole affects the part. Consequently we must treat of the body as a whole. Malnutrition, marasmus, general debility, anemia, paralyses of the tongue, tics and emotional instability must be corrected by medicine, hygiene and other proper therapeutic measures. When there is a disturbance of the glands of internal secretion, the lacking glands must be supplied.

Obstructing adenoids must be removed. A cleft in the palate should be bridged over by operation. Tumors of the back of the nose and throat should be excised. If constricting bands tie down the tongue they should be cut free. The ears must be kept clean of dry, hard wax and closed eustachian tubes must be treated.

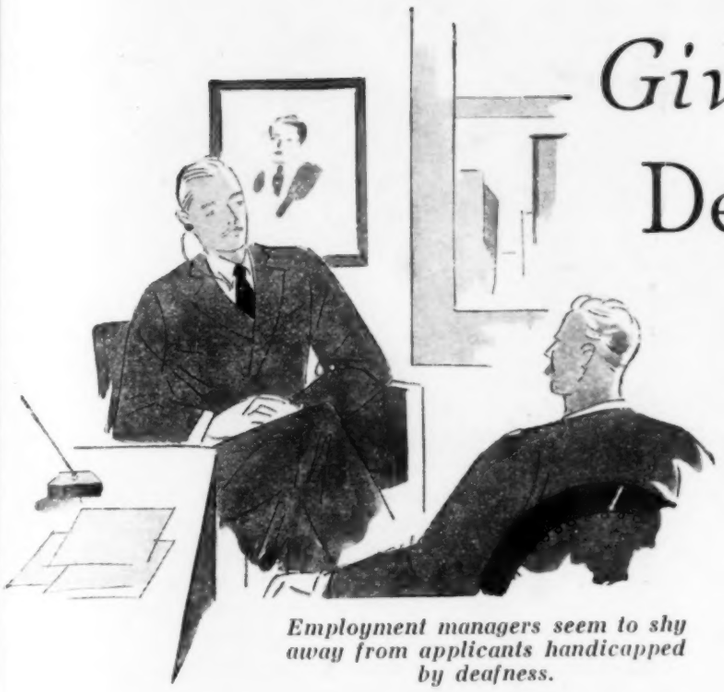
Medical and surgical measures having been used, speech education is then in order. Vocal gymnastics are taught. These exercises strengthen the muscles used in speech. Then the vowel sounds are taught. To these are added the consonants, starting with the simpler ones and gradually working up to the most difficult ones. After this, words and eventually phrases are tried.

When deafness is the cause of the speechlessness and the hearing cannot possibly be restored, the child should be referred to a school for deafmutes where in addition to learning to talk he will learn lip-reading. Remarkable advances have been made in the education of deafmutes, and children that have never been able to hear a sound have been taught not only to speak but to sing in harmony.

A TOOTHBRUSH'S SOLILOQUY

I am that one who best serves man when he
Has early learned the way I best can serve,
And fully meets conditions here imposed,
Of frequent, careful and efficient use;
At early morn and after every meal,
Must with me brush the teeth, inside and out,
With firm and twisting movement up and down
And all across their grinding surface, too;
So that all bits of food that may be caught
In lurking places, which all teeth possess,
Be brushed away, not left to decompose,
And foul the breath or, worse, to form the plaques
That later cause erosion of the teeth
Or bring about infection of the gums,
Forcing their separation from the teeth
And forming pockets difficult to cleanse.
I serve but one, and 'tis essential he
Should keep me clean, for though my life be short,
The service that I render should be such
That my successor be not handicapped.
'Tis needful, too, that one should choose with care
The brush he would have serve him in my stead,
For although true we are in numbers great,
Many indeed there are unfit to serve.
The only recompense we e'er receive
Is when he smiles, for then 'twixt parted lips,
He shows a double row of shining pearls,
His pride and ours; with this we are content.

— H. L. ODELL.



Give the Deafened Man a Chance

By Elizabeth E. Sargent

Employment managers seem to shy away from applicants handicapped by deafness.

AT THE close of the World War the country was confronted with the big problem of making adequate provision for those who had emerged from the conflict broken in health or hopelessly maimed and disabled. Many understanding employers provided work for those who were disabled, thus lightening the burden on their own communities by helping these persons back into occupational life. Other large industries, however, already forgetful of the debt they owed to the ones who had sacrificed so much, refused to help those asking not for charity but for a chance to become economically independent. Not only did they turn away from those handicapped by the war, but they hardened their hearts to all with physical handicaps. They lost sight of the fact that it is a nobler type of service to help men and women to become self-supporting, self-respecting citizens than it is to care for the same persons in some charitable organization.

Triumphant over Physical Defects

Dr. John A. Lapp, past-president of the National Conference of Social Work, has made this statement: "The country that is not good enough for the least of its citizens is not good enough for any of its citizens. Society cannot be indifferent to the sapping of physique and the destroying of faculties of its working members. It has a double interest because it desires the good of its citizens and because it must pay in the long run the cost of the deficiency or incapacity of its workers, both in decreased productiveness and the actual maintenance of works of social care."

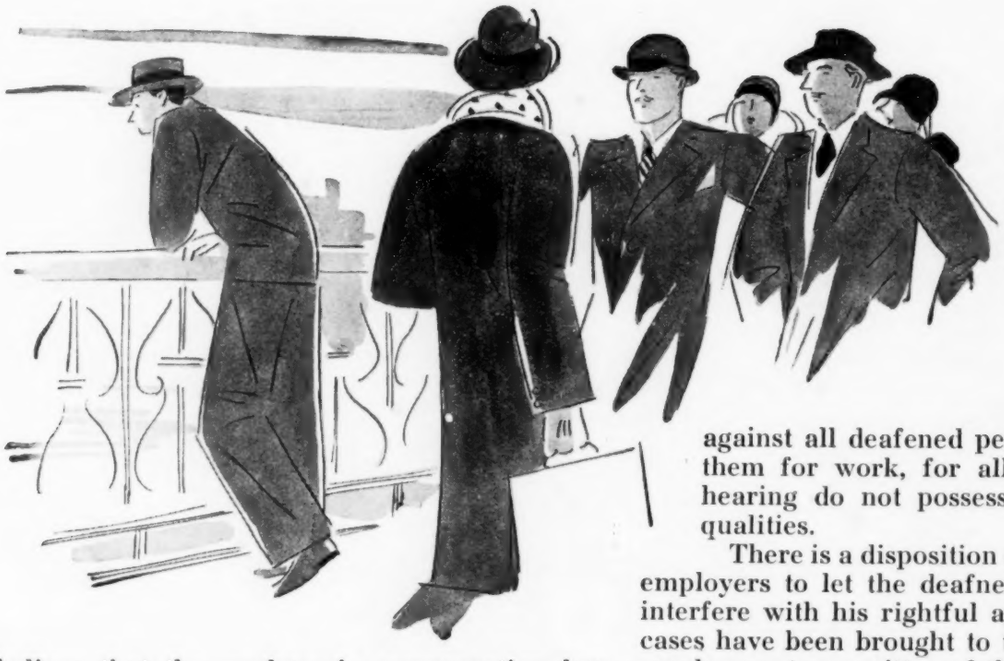
It is true that some physical handicaps disqualify people for certain kinds of work, but there are few disabilities that disqualify them for all kinds of work. The halls of genius are filled with those who have triumphed over great physical defects. What more striking examples of success are there than Beethoven, Edison, Ernest Elmo Calkins and Edward S. Martin, all handicapped by deafness!

Why the Deafened Make Good Workers

Deafness is one of the handicaps from which employment managers seem to shy away. Why is this true? It is a disability that does not carry ill health in its wake. The deafened employee as a rule is strictly attentive to business and does not waste time in idle chatter. He is not distracted by outside noises; he is keenly observant, thorough and persistent, and he concentrates with ease. In many instances he can do the work as well or better than the hearing man with the same qualifications.

The employer will not lose by giving such a man a job and the community will gain, for when a man is given the chance to take his place in the world of economic independence he becomes a better citizen and a community asset. If he is forced to live in idleness, he may become a community bum, and he is certainly not being encouraged to contribute his best to the community welfare.

Employers sometimes hesitate to employ the deafened applicant because they erroneously



If forced to live in idleness the deafened person may become a community bum or, discouraged by rebuffs, may contemplate suicide.

believe that the workmen's compensation law forbids them to hire those who have physical defects. When the compensation act was first drawn up, deafness was not even considered an economic disability. John A. Kratz, chief of the civilian vocational rehabilitation division, in a letter to the chairman of the committee on industrial research of the American Federation of Organizations for the Hard of Hearing, in February, 1925, explains the limited training of the deafened group, thus: "Although it is realized that deafness is a great handicap, so far as skilled trades are concerned it does not offer particular bars, because when a person is taught lip-reading, he is enabled to compete on a basis with other workers."

Deafness itself rarely incapacitates one for remunerative employment, and deafened persons are succeeding in all walks of life. Although the national organization for the hard of hearing would hesitate to advise a deafened applicant for vocational advice against entering any profession on which he had set his heart, it is true that some positions are more difficult for the deafened than others. Modern business is highly specialized. Each department has its regular routine work, making it unnecessary for employees in general to be forced into contact with many persons outside their own departments. The deafened worker fits into routine work well, because he is used to the monotony of the "silent world."

Some employers may hesitate to employ the hard of hearing worker because the few they have come in contact with have exhibited certain objectionable characteristics: sensitiveness, moroseness, "the world owes me a living" attitude, and surliness—the cloaks under which they have endeavored to hide their heartaches. It is unfortunate that this has led to a prejudice against all deafened persons who apply to them for work, for all who are hard of hearing do not possess these undesirable qualities.

There is a disposition on the part of many employers to let the deafness of the employee interfere with his rightful advancement. Such cases have been brought to the attention of the employment committee of the American Federation of Organizations for the Hard of Hearing. A man in government employ is regularly permitted to do the work of the man above him, but his deafness disqualifies him for advancement in rank and salary. If he is fitted to do the work, is it fair that he be denied the material advantages that are granted to his hearing co-workers? Several successful teachers who have asked the national organization for advice about lip-reading and hearing devices have requested that the replies to their letters be enclosed in plain envelopes, because if the seriousness of their deafness were suspected they would lose their positions in spite of good records in their profession.

Such an unfavorable attitude against the deafened often results in an applicant's unwisely trying to conceal his deafness. Deafness, however slight, can rarely be concealed for long, and when the employer discovers that he has engaged a deafened worker, he feels that he has been cheated, and the hard of hearing employee falls into disfavor.

The American Federation of Organizations for the Hard of Hearing, through its local clubs, is doing much to prevent the deafened man from becoming a community care. These organizations are building up the morale of the individual by making him have faith in himself. He is helped to acquire the art of lip-reading, which makes communication with people easier; he is advised in the matter of selecting a hearing device suited to his kind and degree of deafness; he is encouraged in self-expression; he is advised vocationally, and he is helped to overcome any feeling of inferiority he may have developed, to take his rightful place in the world of hearing people and to ask not pity and charity but the chance to serve.

Behind Your Prescription

By Norman Goldsmith

THE next time your doctor hands you a prescription, you may notice that it possesses a definite form. At the top left, you will see the familiar sign ℞, which you have always associated with druggists and drugstores. ℞ is indeed almost a universal symbol of the apothecary's trade. It is called the superscription. The "R" stands for the Latin word *recipe*, meaning literally "take thou." The oblique bar, tradition says, is an invocation to Jupiter that the contents of the prescription be beneficial to the patient.

You will next notice one or several drugs with the amount of each. Thus:

Sodii Bromidi	grains x
Aquam	ad ounces j

This means—"of sodium bromide, 10 grains; water to 1 ounce.

"Why that's sodium bromide," you will say to yourself if you have ever studied chemistry. "And aquam? Aquam, let's see. Why *aqua* is Latin for water!"

As a matter of fact, English is rapidly superseding Latin in the prescription, but there are still a vast number of prescriptions written in the old tongue. But why? you inquire.

Ask old Mrs. Gabber around the corner, and she will tell you that prescriptions are just water and sugar and that physicians write them in Latin to convince you of their own learning so that they may charge you a big fee.

There really are definite reasons for using Latin. In the first place, Latin is the accepted language of scientific nomenclature. Second, it is more or less universally understood, which means that you can get that favorite cough medicine of yours in chemists' shops in Paris or Rome, Berlin or Tokyo. Lastly, it happens to be the language of pharmacy and the one used officially in the Pharmacopeia.

The Pharmacopeia

The Pharmacopeia lists standard drugs approved for physicians' use; gives their chemical formulas, directions for preparation from crude material, and descriptions of mineral, vegetable and animal drugs, which include vaccines and serums; specifies chemical or biologic tests for establishing the identity and quality of these; and includes tables of solubilities and much miscellaneous information.

The methods of standardizing the drugs are sometimes interesting. The exact strength of ergot cannot be determined chemically. Therefore, what is known as a biologic assay is made. A definite quantity of the unknown ergot solution is injected into the muscles of a single-comb white leghorn rooster. In time, the comb darkens. The degree of darkening is compared with that produced by a standard solution and proper dilutions or concentrations are made. The strength of epinephrine, or adrenalin, is determined by the rise in blood pressure in anesthetized dogs.

Each country has its own pharmacopeia, but there are only minor differences in the selection of drugs and standards. Every ten years, the Pharmacopeia of the United States is revised and a new edition published. The committee of revision is appointed by a national convention meeting at Washington and consists of representatives from leading medical and pharmaceutic schools. The last meeting of the convention was in 1920, when the tenth revision was made.

National Formulary and N. N. R.

Another volume, similar in scope and purpose to the U. S. P., is the National Formulary, now in its fifth edition. Both these books are published privately, but by an act of Congress the last revision of each is accepted as the legal standard for the preparation and purity of the drugs listed and described in it.

Preparations listed in these two books are known as official. But during the years between revision, especially nowadays when such rapid strides are being made in pharmaceutic therapy, numerous new and excellent drugs are constantly being manufactured. To introduce these to the medical world, so that the public may obtain immediate and rapid benefit from them, the American Medical Association publishes each year a volume entitled New and Non-

official Remedies, listing those preparations that have been investigated by the council on pharmacy and chemistry and are believed to be useful. Insulin, for example, discovered in 1922, appears in New and Nonofficial Remedies but will not be in the Pharmacopeia until some time after 1930.

N. N. R., as it is usually abbreviated, sets extremely rigorous standards for all the drugs it lists and places definite and severe restrictions on secrecy of formulas, exaggerated claims in general advertising, suggestive names, poisonous contents and habit formers.

Quantities

There are two principal systems of weights and measures for prescriptions—the apothecary, generally used in the United States and England, and the metric, used on the European continent.

The metric is beginning to supplant the apothecary here. Its cardinal advantages are: it is simple, being a decimal system; the weights and measures are in similar units, grams and cubic centimeters; it is the legal system of most civilized nations; and, finally, dosages of newly discovered drugs are usually given in it.

The apothecary system, however, is still extensively used, especially among older physicians and it is still generally taught in schools of pharmacy.

It is important, particularly with potent drugs, that accurate doses be taken. Small measuring cylinders and sufficiently exact droppers can be purchased at any drug store, and certainly should be used for the more powerful preparations. There are, however, certain household utensils that still occupy a point of high favor in drug measurement. These domestic measures with their metric and apothecary equivalents are given.

Household Measures with Approximate Equivalents

Household measure	*Metric*	*Apothecaries'*
Teaspoon	5.0 cc.*	One dram
Dessertspoon	8.0 cc.	Two drams
Tablespoon	15.0 cc.	Half-ounce
Wineglass	60.0 cc.	Two ounces
Glass	250.0 cc.	Eight ounces

* cc. cubic centimeter.

After the listing of the drugs and their amounts on the prescription, you will find another line, usually beginning with "M." This means *misce*—"mix." This line is called the subscription and contains directions from the physician to the druggist.

Your doctor may want you to take the prescribed drugs in solution, in pill form or in capsules; or he may wish them coated with some substance insoluble in the stomach but soluble in the small intestine. All these directions he puts in the subscription.

There remains now one more portion of the prescription. This is in English and consists of directions to the patient. It is called the signatura and literally means "label."

It is extremely important that the doctor's directions be fulfilled explicitly. For example, he may say "shake well." Why? In some prescriptions a fine precipitate is present. When a bottle stands, this gradually sinks to the bottom carrying with it much of the drug itself. Spoonfuls taken from the upper part of the bottle contain too little of the therapeutic agent, those from the bottom too much, variations which may lead to uppleasant symptoms. The druggist knows that a precipitate may form and puts a "shake well" sign on the bottle. The shaking will distribute the fine particles evenly and prevent overdosage or underdosage.

Or again, the physician may say "take before meals." Drugs are absorbed much more quickly through an empty stomach than a full one. If the prescription is taken after the meal it may be practically worthless.

At all events, one should always follow the detailed directions of the signatura.

Shotgun Prescriptions

Twenty-five years ago, physicians frequently prescribed what were called shotgun prescriptions. The idea was to include a number of drugs in one bottle in the vain hope that one or another of the constituents might hit the target. With the rise of experimental pharmacology the pendulum has swung the other way. Modern prescriptions contain a small number of ingredients and usually there is a definite rationale for the use of every drug. Much of the change, too, has been caused by the substitution of synthetic chemical products for natural drugs, such as herbs and vegetable extracts.

There are several additions to the ordinary prescription for narcotics. These fulfil the requirements of the Harrison Act, the most important specifications being the presence of the physician's name and registry number and the patient's name and address. Narcotic prescriptions are not refillable.

Alcoholic beverage prescriptions also require a special form and cannot be individually refilled.

One last word—drugs are frequently kept too long. If you go into the average bathroom medicine chest, you will see half-filled bottles with labels four and five and even more years old. Drugs so old are frequently impotent, but may be harmful. It is a good plan to get rid of all bottles following convalescence from any illness.

And is it needless to remind you that poisons should always be placed in distinctively shaped or colored bottles and should be far out of the reach of children?

Right Clothes for Rest Cures

By Paula Williford Colson

"ALWAYS dress the part," is advice especially valuable in taking the rest cure. Since the medical profession is recommending the rest treatment for an increasing number of diseases, particularly tuberculosis, the wardrobe end of the proposition demands careful consideration.

Well might the weary patient wish that the cure implied complete rest from the age-old question, "What shall I wear?" But few are given the chance to live in such an Edenic state. Here, rest is secured by simplifying instead of removing the necessity of clothes. Indeed suitable dress seems to be an important part of the cure. In no other phase of life is the proverb, "Fitting dress means success," more clearly demonstrated.

Mrs. Courageous had her husband and their two small children on the rest cure. "Just think!" she exclaimed visiting on my porch, "Mother and I sewed for weeks making a bountiful supply of clothes for my children, and Billy bought two new suits to come here. The three have been in bed ever since Dr. Specialist examined them and he says they will be there for months to come. We could have found better use for our money if we had known the significance of the rest cure."

"I didn't know any better myself," puffed Mrs. Stout, come from her rest in bed just to see who was talking. "Why, when our family doctor ordered me here I got ready to have a good time. There ain't much the matter with me. I don't cough a lick—just tire out pretty quick. But I washed up all my blankets and curtains and put my house in apple-pie order and then bought me more clothes than I'd ever had before, thinking all the time I'd have a good rest in fine style." Her laughter gurgled like syrup running from a barrel bung.

But she instantly grew solemn as she added, "And here I have to stay in bed, with all my things getting out o' date. Nothing to do but lie on the side o' this lonesome mountain! I get so blue I nearly cry my eyes out." Immediately her eyes were irrigated.

While my callers talked, I thought pleasantly of my own preparation for taking the rest cure. Left to myself, I should undoubtedly have made mistakes similar to those related.

But I was already a bed patient. When Doctor Familias said briskly to John, my husband, "She must go right away to the mountains for the rest cure," it sounded so simple and delightful that I imagined myself soon well again. And of course I thought of clothes.

After patiently listening to my plaint of nothing to wear and too tired to attend to it, John divested me of care as of a garment cast. Fortunately his practical judgment and experience inspired my confidence. I claim no merit in this period of successful dressing. I merely wish to help others who, although they have no such John, may be compelled to solve the clothes question during a long illness.

I was off as soon as we could arrange with Dr. Specialist. At the end of my journey, made in a one-piece woolen dress, my trunk yielded each needed article in order—nothing lacking, nothing superfluous. John was an artist, and the tray a work of his imagination. For

six months I never looked beneath. My accustomed toilet articles, writing materials, a little reading matter and clothes, all topped with gowns and kimonos, lay conveniently to hand.

My wardrobe consisted of the following:

1 pair of summer bedroom slippers
2 pairs of hose
2 long kimonos
1 negligee
12 thin nightgowns
2 pajama suits
2 thin bed jackets
2 slightly heavy bed jackets, caps to match jackets
2 woolen scarfs

Of course the list may be varied to suit individual preference. Both men and children will likely use pajamas. Men will substitute bathrobes for kimonos, and sweaters or smoking jackets for scarfs. It is best to choose just what one needs. Extras will be a burden at a time when feathers are lead. The articles named, replaced when worn, served me perfectly for summer during the four years I was in bed.

Inexpensive and Easily Acquired

Small wardrobe that, but besides being inexpensive and easily acquired it was altogether sufficient.

It is imperative that tuberculosis patients should maintain a comfortable temperature. Overheating to sensible perspiration, or the reverse to cl[illegible]ng, tends to produce tightness and coughing to the extent of real discomfort and injury. Therefore I found underwear objectionable even in winter, because I could not lay it aside with ease on warm days.

As cool weather came on I used the heavier jackets and scarfs mornings and evenings, changing to lighter ones as the day grew warmer. It may seem trivial to mention such a simple thing, but not so when one recalls the large number of persons who don and doff underwear by the calendar.

When winter came John wrote me to look under my trunk tray. I had thought all along that my dresses and shoes and other garments were there, but the nurse found instead two genuine woolen blankets. Imagine the comfort and security I felt in this extra covering when the mercury was low. He also sent the following, which filled every need:

6 long sleeved, high necked outing flannel nightgowns
2 pajama suits of the same weight
1 heavy bathrobe
2 pairs of woolen hose
1 pair of warm bedroom slippers
2 short heavy sweaters
1 large heavy scarf
1 woolen cap to button under the chin

By shifting these garments I kept warm during the severest weather, and cool on the glorious sunny days that make Asheville, N. C., the hope of hundreds of tuberculosis patients. In all my illness I never had a cold or even an affection of the head, and I believe that my safe and comfortable experience was largely due to careful dressing.

The Comfort of a Heating Pad

Another indispensable factor of my comfort was an electric heating-pad. Its superiority to all other methods of bed-warming is in its ever-readiness and ease of regulation. The proper amount of heat without danger where and when one needs it is perfection of service. The cost is reasonable, and with care a pad will last for years. If the porch has long hours of summer sunshine an electric fan will help, but it is by no means so necessary as a heating pad in winter.

But with the best possible solution of material wardrobe needs, it still remains for the patient always to be clothed also with a cheerful and obedient spirit. In tuberculosis it is not only useless but even self-destructive to despair or rebel. Given the opportunity to avail herself of treatment under a specialist, the patient will do well to count blessings rather than troubles. She should recognize that the white plague is a formidable enemy that may be overcome by patiently taking the rest cure. Asheville has scores of men and women, some of them brought here on stretchers twenty or thirty years ago, who are now busy and prosperous

But with the best possible solution of material wardrobe needs, it still remains for the patient always to be clothed also with a cheerful and obedient spirit.

"cures." Be thankful. Be cheerful and obedient and courageous. Surely life is worth fighting for!

My courageous caller long since took her husband and children home restored to health. They saved time and strength by beginning before the disease was far advanced and faithfully taking the cure to the end.

Poor Mrs. Stout fretted along until the specialist dismissed her for disobedience. Months ago she entered into that permanent rest where clothes matter not at all.

As the patient advances to chair rest of course she gradually returns to day clothes, which if new and up to date add much pleasure to that tiresome time.

One has abundant opportunity to observe what others are wearing and to plan accordingly. But what if one has on hand a generous wardrobe hopelessly antiquated by a sudden change in the styles. Many would almost necessarily be tempted to use it, for while the rest cure frequently fattens the patient it generally flattens the purse.

Suitable dress seems to be an important part of the cure. There should be nothing lacking, nothing superfluous.

Then, too, some of us though cured are fitter for ornament than use. But of course we must have up to the minute wardrobes, because quadrennial clothes are hardly more desirable than last year's robins' nests.

But old habits are strong. Since John had so long relieved me of all care for clothes, I naturally remarked to him that the one thing that I dreaded when I got well was getting something to wear.

"Look here, dear wife," said he sternly with a twinkle in his eyes, "we've been taking the rest cure and we are just about cured —cured of tuberculosis and I hope of wardrobe worries. If I ever find you fretting about anything, little girl, I shall call you naughty, and straight again into your nighties you'll go."

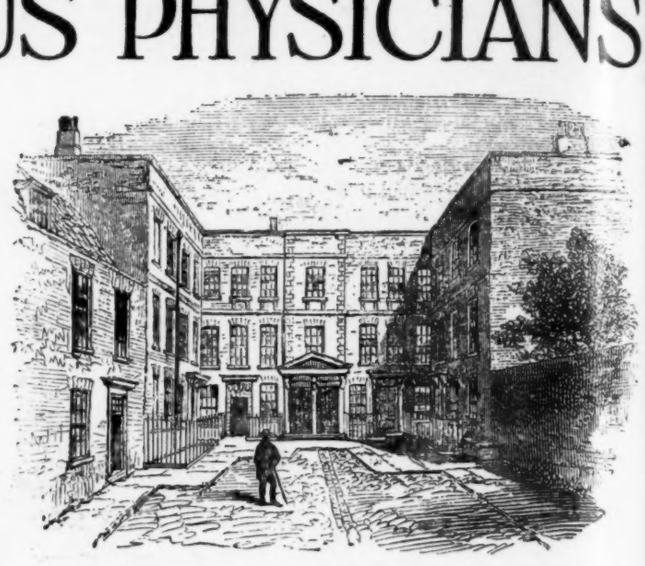
And I believe him.

Pacific and Atlantic

May's promise of summer fruits.

TUBERCULOUS PHYSICIANS and their Contributions

By J. A. Myers.



Monmouth House, the residence of Smollett at Chelsea.

Tobias Smollett

ALTHOUGH Tobias Smollett is remembered principally for his contribution to the development of the English novel, he was educated for the medical profession. In spite of this training no treatment in any guise was employed for his obvious tuberculosis until late in life, when he sought a milder climate. Added to this, the circumstances under which he labored were most unfavorable, for worry was his hourly companion. Yet the prodigious mass that Smollett published would appal a well man today.

Tobias Smollett's family were gentlefolk and the owners of Bonhill, Dumbarton, Scotland, in the valley of the beautiful Leven. His grandfather was a figure of note in the community, being a judge and at one time a representative to the old Scottish Parliament. His father, Archibald, made what to his grandfather's practical Scotch mind was an unsatisfactory marriage since it decreased rather than augmented the family fortune. Shortly after the birth of the third child, Tobias George, in 1721, Archibald Smollett died. His widow was given a small farm and a meager annuity from the family estate with which to rear her children.

Apprenticed to a Surgeon

Smollett's early childhood was spent at Dalquharn in the valley of the Leven near Loch Lomond. He attended the Dumbarton grammar school under the instruction of John Love, an outstanding teacher of his day, who gave him excellent grounding in the classics. His brother James joined the colors and his sister made a profitable and happy marriage, while Tobias, in spite of the fact that he too wished to join the army, was apprenticed to a surgeon and apothecary, Mr. Gordon of Glasgow.

Neither the art nor science of medicine were complex nor was the profession highly respected in 1730, for the calling of barber and bloodletter was closely associated with it. Smollett's duties probably consisted, as did medical apprentices' for many years to come, in keeping shop and accompanying the practitioner as general handy man on his rounds.

While working from 8 in the morning until 9 at night, Smollett also attended medical courses in the University of Glasgow and studied Latin, Greek and philosophy as well. He lived at Mr. Gordon's home and testified to his goodness by stating in "Humphrey Clinker" that "had he [Dr. Gordon] lived in ancient Rome, he would have been honored with a statue at public expense." In spite of the apparent good will and helpfulness of friends and relatives, Smollett gave evidence at this early date of his irascibility, which was to prove the most conspicuous feature of his life and his writings.

From the records of Glasgow University for 1738-1739 the facts are to be gleaned that he passed with approbation his examination in anatomy and medicine, and was thereafter qualified to practice as a surgeon.

Play Writing Efforts Rejected

At the age of 19, Smollett left Glasgow for London with nothing but the manuscript of an historical drama and a large number of letters of introductions from relatives in his pockets.

The drama he submitted to several managers, who refused to consider it. He then applied to Lord Lyttelton for his patronage but without success. Therefore Smollett fell afoul of Lyttleton, Garrick and every one whom he had consulted about the drama.

Since a livelihood had to be obtained by some means and since his future as a playwright was

not brilliant, Smollett boarded the *Cumberland*, under Sir Chaloner Ogle, as a surgeon's mate. The European powers were carrying on a dispute over one of the possessions in the New World. The expedition on which Smollett served is known as the War of Jenkin's Ear and took place in 1739. The scene of the battle was Cartagena, Colombia, and the enemy was Spain. Owing to the jealousy and lack of cooperation between the leaders of the land and sea forces the outcome of the battle was a defeat for England in spite of the loss of an appalling number of lives. Smollett draws freely upon his experiences in this war for material in his excellent sea characters in "Roderick Random," while a convincing, though shocking, account of the brutal inhumanity and inefficiency of the leaders published later in his accounts of famous voyages eventually resulted in a reform in the English navy.

Tobias Smollett, eighteenth century physician and novelist.

The fleet, scourged with malaria, sailed after the battle to Jamaica, where Smollett met and was betrothed to Nancy Lascelles, the attractive daughter of an English planter of some small fortune. In 1747, he married Miss Lascelles, having returned to London in 1744 and established himself in the former residence and shop of Dr. Douglas, a countryman, on Downing Street.

In spite of sufficient training, a pleasing demeanor and a favorable location, Smollett was not a successful physician. The explanation lies in his lack of patience with the foibles and follies of humanity. From the time of his student days through his entire life he held up these foibles to ridicule and derision through his writings. He lacked the sympathy, tact and understanding that are paramount in the character of all successful physicians; nor did he feel these qualities worthy of cultivation on his part. He bluntly informed one patient that "if she had time to play at being ill, he did not have time to play at curing her."

His restless, protesting spirit found expression in "The Tears of Scotland," a patriotic outburst against the English treatment of the Scotch Jacobites. This was followed by two satires, "Advice" and "Reproof." The latter was a tirade against Rich, the manager of Covent Garden. Thus the opportunity to have his "Alceste" used as the libretto for music by Handel was ruined by Smollett's quarrelsome spirit. Handel commented: "Dot Scotch is ein Dam fool; I could have made his work immortal."

Richardson had introduced a new form of literary expression, the novel, in 1740. Fielding followed Richardson's "Pamela" by "Joseph Andrews," a character novel, while Smollett created a new sphere by the publication of "Roderick Random," a novel of incident. This novel abounds in adventures of all varieties and manners but the hero is neither admirable nor delightful from the modern point of view. Its success was widespread and immediate and after the first edition the book was published with Smollett's name on the title page.

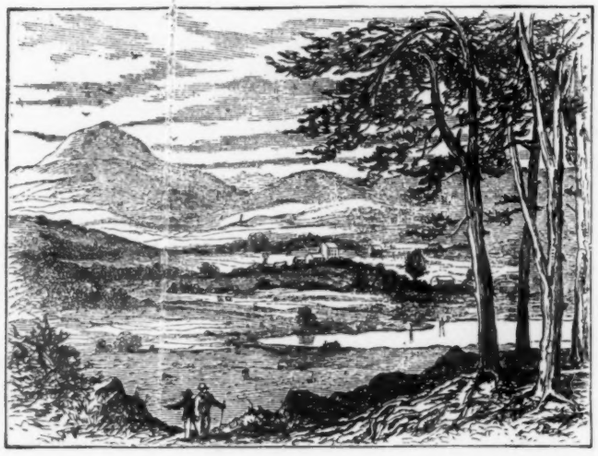
In 1750, Smollett visited Paris, where he gathered copy for "The Adventures of Peregrine Pickle," a novel similar to "Roderick Random." This likewise was highly popular. The lasting features of the novels of Smollett are his sea characters. They have served as a model of nautical tales until the sea itself has lost its identity in Smollett's account. "Indeed it is no exaggeration to say that the tidewater of subsequent fiction is strewn on every hand with *disjecta membra* of Smollett's happy phrases and farcial inventions."

Having received an M.D. degree from the Marischal College of Aberdeen in June of the same year, Smollett, who had previously held only a surgeon's certificate, made another effort at establishing a practice at Bath. Therefore he published his one scientific paper, a treatise on the use of mineral water, the pompous title of which would grace a doctorate thesis today. In it he scoffed at the quacks who were giving treatment and he fumed at the hypochondriacs who were seeking attention for imaginary ills while enjoying the gaiety the resort offered.

After this futile attempt Smollett gave up all efforts in medicine and turned seriously to letters. The work he accomplished was astounding. Even the titles would prove wearisome to a modern. He was in turn a compiler, a historian, a translator, an editor, a dramatist and a novelist.

His history of England he completed in fourteen months; he stated in the preface that he had consulted more than 300 source books. He is said not to have left his house at any time during the fourteen months; "my life is sheer drudgery," he wrote; "my pen is at work from

9 o'clock in the morning till 1 or 2 in the morning. I might as well be in Grub Street." In Grub Street he almost was. He was habitually in debt, not from too high living but as the result of law suits, loans to pay the interest at 60 per cent on previous loans, unwise moments of



View of Leven valley, with the house of Dalquharn in the middle ground.

generosity and on one occasion, at least, the loss of his pocketbook to a highwayman.

In the midst of all these activities, Smollett found time for a visit to his home in Scotland. He created a great sensation, for he was now a person of renown, a successful novelist and a man of the world.

His two magazine ventures were unfortunate. The *Critical Review,* which was in a large measure the forerunner of our present day magazine of literary and current criticism, proved a financial failure. Besides this, he embittered former friends and made open enemies by his attacks and his failure to check closely the work of his contributors. The political periodical, *The Briton,* actually landed him in jail for three months as the result of a bold criticism of Admiral Knowles. But Smollett's spirit was indomitable. He wrote a part of his fourth novel, "Launcelot Greaves," after the manner of Don Quixote (his third novel "Ferdinand, Count Fathon," having appeared previously) while he was in prison. This is the first novel ever to appear serially in a periodical.

However, Smollett's character was not made up entirely of bile and venom. He was fair minded enough to admit that he was mistaken in his judgment of Garrick, and the admission was made public by its appearance in his history. As a result Garrick played the lead in Smollett's successful drama "The Reprisals," or "The Tars of Old England."

Smollett suffered a stunning blow in the death of his only child, Elizabeth, from tuberculosis. He says: "I am writing with a breaking heart. I would wish to be beside her, were the wish not cowardly so long as poor Nancy is unprovided for." Perhaps through ignorance of any means of prevention and even of the communicable nature of the disease itself, Smollett had exposed his most precious possession to his own infection.

An attempt at gaining a new hold on life was made by a journey through France and Italy, which he records in his "Travels." While in France he consulted an eminent physician, the first mention to be found of any medical advice asked for or received. He described in Latin all his symptoms, his cough, his irritability, his fatigue, his scurvy and his fever. "In return for this heart rendering catalogue of ailments, the physician enclosed a futile prescription and a considerable bill." He remained on the continent for two years, finding the excellent dry climate of Nice highly agreeable because of his asthma. Had the modern knowledge of the pathology and treatment of tuberculosis been available at even this late period, his life might have been lengthened, and the further contributions he might have made to the world can only be surmised.

With his health much improved, Smollett returned to Bath. From here he made his final

Tomb of Smollett, in the old English cemetery, Leghorn.

visit to Scotland, where he was lionized by the eminent men of the day. Yet the visit was not entirely pleasant, for Smollett wrote a friend begging his wife not to judge him from that visit since she had seen the "wrong side of the tapestry." Upon his return to Bath and London he published "The Adventures of an Atom," a political-social satire in which he vehemently denounced politicians and statesmen of his day

His health was totally ruined. Constant rheumatism and the pain arising from a neglected ulcer, rendered him a victim to excruciating agonies. He felt that he must escape another English winter. Although he was unsuccessful in obtaining a consulate that would assist in supporting his wife and himself because he had antagonized some influential persons or refused to ask favors of others, he sailed for Italy in December, 1768, settling near Leghorn at Morte Nova. Here he wrote "Humphrey Clinker," unanimously adjudged the finest of his novels.

He died in September, 1771, and was buried in Leghorn. Later an obelisk was erected in his memory on the banks of the Leven, for which Dr. Samuel Johnson wrote a Latin epitaph.

As for Smollett, the man, he was "impetuous, splenetic, hot passioned with a sarcastic tongue, a corrosive pen, a temper which grew morbid through worry and work and ill health. He was yet the most kindly and generous of souls and the keenest of friends. Hume said of him 'he was like a coconut; the outside was the worst.' He was even more angry at wrongs done to others than to himself—indignant at anything mean or base. With dignity of nature as well as of manners, he would curry favor from no man and bow before no patron."

Smollett is remembered and admired, not only because he created immortal sea characters, was instrumental in reforming the then medieval English navy, wrote a history of England and gave an added impetus to the development of the English novel, but also because he was plucky in the struggle against a disease that he did not comprehend. Modern knowledge recognizes his irritability as the probable result of his toxic condition. But Smollett had no such illuminating information, yet he continued his fight bravely and manfully even after he had lost his only child to the enemy. His courage and perseverance are worthy of the highest compliments an understanding posterity can give.

A Crusade Against Motor Accidents

A WORLD-WIDE crusade against automobile accidents through the elimination of unfit drivers is being advocated by a Belgian physician through the Royal Academy of Medicine of Belgium and the Brussels medical journal.

A tentative list of the infirmities and diseases that render a person unfit to drive a motor car has been drawn up, as follows:

Vision.—Vision of both eyes is required. Visual acuity, after correction by glasses, should be at least 4/10 in one eye and 1/10 in the other eye. The visual field should be normal in each eye. Night-blindness or double vision makes a person unfit to drive an automobile.

Hearing.—One third of normal hearing in both ears is required; this means that the driver should possess the ability to understand whispered words at a distance of 3 meters (about 10 feet).

Condition of the Limbs.—The complete loss of use of a limb renders a person unfit to drive a car. This has reference not only to an anatomic loss of leg or arm but also to articular, muscular or nervous lesions that entail complete loss of function. Cases of partial impotence involving more than one limb should be submitted to a medical board for decision as to the competence of the person concerned.

Nervous Diseases.—Epilepsy, tabes, paresis, Parkinson's disease, multiple sclerosis and syringomyelia (a disease of the spinal cord) make a person unfit to drive.

Mental Disorders.—All definite mental disorders prevent a person from handling a car completely.

Cardiovascular Diseases.—Grave cardiovascular diseases, such as angina pectoris and high blood pressure of a marked type, disqualify a driver.

Drunkenness is an absolute cause of unfitness.

According to the plan of the Belgian physician, the burden of proof of his physical fitness would be put on the individual motorist. A list of the various physical defects that render a person unfit to drive an automobile would be drawn up and given to each applicant for a driver's license. Any one presenting any of the stated defects who drives a car would be guilty of misdemeanor. If a person who is unfit exceeds his rights and drives a car, he would be in a case of accident, ipso facto, after examination by an expert, sentenced to the payment of a heavy fine and to imprisonment; in addition, he would be responsible for the damage suffered by others by reason of the accident.

The intervention of insurance companies would aid in getting rid of the unfit, it is believed. After making it obligatory for drivers to carry insurance against accidents, the law would prohibit insurance companies from issuing a policy to an unqualified person.

The author of the plan believes that it will not suffice for each country to establish regulations in order to eliminate the unfit. Every day automobilists in great numbers cross international borders and eventually an international organization of traffic will have to be established.

The problem of reducing the number of motor accidents is being studied in every country.

HYGEIA
THE HEALTH MAGAZINE
Published by the American Medical Association
535 North Dearborn Street, Chicago

Plain Facts about Health and Disease

THE SUMMER CAMP

ALREADY the owners and proprietors of summer camps are beginning the spring cleaning and the modifications necessary to make the camps suitable for safe occupancy during the coming hot season. There are only a few of the states in this country that provide for regular inspection of camps by officers of the state board of health. Since 1926 Maryland has had regular supervision and inspection of camps. In 1928 one hundred and four camps were inspected in that state and only seventy-six were licensed to operate. Only the camps that meet the state requirements for sanitation and for general care can obtain a license to operate.

It is a strange aspect of human logic that a parent who will have his child in a private school with regular examination and the best of medical care during the winter season will send that child to a camp during the summer, hundreds and sometimes thousands of miles from home, and never give a thought to the possible dangers that the child may have to overcome from a sanitary and health point of view.

Many camps have not the slightest arrangements for screening of sleeping quarters. Some, although located in rural districts, feed children largely on canned instead of fresh vegetables. Some camps constitute bad fire risks because oil lamps are used, being hung directly on frame shacks of flimsy construction. Medical assistance varies from the constant presence of a nurse to the use of hospital interns, recent graduates, doctors 30 or 40 miles away or doctors actually in residence in charge of the camp. Beyond these questions comes the consideration of such fundamental sanitary problems as proper water supply, milk supply and sewage disposal.

The state of Maryland asks all conductors of camps, whether for adults or children, tourists or residents, to make due application for inspection; it provides rules and regulations governing camp ground sanitation and plans for protecting springs and wells from pollution. Plans for small living quarters in camps and advice in regard to suitable building materials and ventilation are also available.

Other states will do well to follow the example of Maryland and give to people who use summer camps proper protection against sanitary deficiencies. In the other considerations that have been mentioned leadership must come from owners, managers and parents. Only such cooperation will secure for the children in summer camps the type of safety and medical care that parents provide for them at home.

THE HOSPITALS OF THE UNITED STATES

ONE of the most remarkable phenomena in the development of the care of the sick in the United States has been the increase in the number of hospitals. Less than a decade ago—in 1920—there was one hospital bed for community use for every 340 persons in the United States. In 1928 the number of hospitals had increased so greatly that there was one bed for each 270 persons, and during this period there was of course an increase in population. In the advance of hospitalization there have been certain trends that are of great interest.

Babies like to be born in hospitals, or mothers like to have their babies in hospitals, or doctors like to have mothers have their babies in hospitals. One of these three factors, or all three of them, must be concerned in the increasing use of hospitals by the public. During 1928,

according to available records, 736,321 infants made their first announcements to the world within hospital walls. An average of 702,738 older persons were in the hospitals as patients each day.

As the physicians of the country increase their demands on hospitals for both medical and surgical care of patients, more and more physicians are becoming associated with the hospitals. Thus 77,524 attending physicians utilized the hospitals and 5,906 interns and 5,025 resident physicians were in constant attendance on the sick. There are 6,825 hospitals worthy of recognition in our country and these provide beds and bassinets amounting to 936,247. The increase in available beds has been about 150,000 since 1923.

Any one who has had to apply to a hospital for a room realizes that not infrequently the demand is so much greater than the supply that it is difficult to get suitable accommodations. The reasons for this are many. The public as well as the medical profession knows that the hospital can provide many of the refinements of modern diagnosis and treatment that are not available in the home or even in well equipped physicians' offices. Modern living conditions in apartments are such that it is difficult to carry along a sick person without completely upsetting the establishment. Surgery can be done properly, of course, only under hospital conditions. There has seemed to be somewhat too great a tendency to hospitalize medical cases. The advantages of easy access to a physician in time of emergency and of modern laboratory study are not to be weighed too lightly, however.

Hospitals in the United States have been rated by various bodies for various purposes. The American College of Surgeons listed 1,559 hospitals out of the almost 7,000 as meeting its minimum standards unconditionally. The reasons for failure to meet these standards are varied, including sometimes, no doubt, refinements of operations or social-economic problems that are difficult to evaluate. The American Medical Association, through its Council on Medical Education and Hospitals, has listed 613 hospitals as suitable for the training of interns. The requirements here are extremely rigid, since they bar the small institution of less than 100 beds, since they require a suitable number of postmortem examinations on persons who die in the hospital, since they demand suitable libraries and hours of teaching for the young men who are to be the physicians of the future. Actually there are not enough young men available each year to meet the demand for interns and many institutions employ salaried resident physicians.

The hospitals registered by the American Medical Association include 6,852 institutions, and some 458 hospitals are omitted because investigation has indicated that these places are not, in the opinion of the Council, suitable for a sick person. A registered hospital must have a staff of properly qualified doctors and all physicians treating patients in the hospital must be graduates of reputable medical schools; the management must be in the hands of a competent physician, an able superintendent or a board of trustees; a physician-pathologist must examine all tissues removed at operations and make a suitable report; careful histories and records must be made of the patients in the institution, and these must include reports of analyses made in the laboratory and in the x-ray department; there must be good nurses in sufficient number to take care of the patients in the hospital; finally, when there are more than three physicians on the staff, the physicians must meet regularly to discuss the work of the institution and the care of the patients.

Under such conditions a hospital becomes in every sense of the word an institution of public service and obviously difficult to conduct for purposes of profit. Today the hospitals in the United States are by a tremendous majority conducted for the purpose of securing better medical service for their communities.

THE PRESIDENT EXERCISES!

Seven o'clock has long been Mr. Hoover's rising hour. But no electric horse will give the newest occupant of the White House his morning exercise. Accustomed for years to an outdoor life in the pursuit of his profession, he did not take up any of the ordinary exercises when he became an office man. In fact, he told me months before he was even mentioned for the presidency that his exercise consisted merely of deep breaths inhaled before an open window in the early morning. Some physician at Johns Hopkins had recommended this to him, and he had found it a beneficial way in which to begin the day. —S. J. Woolf in the New York *Times* Magazine.

THIS apparently is the true story of the way in which the President of the United States keeps himself fit. Recent items in the newspapers indicate that not infrequently he tosses the medicine ball about with the Secretary of the Interior and thereby, no doubt, induces a mild, pleasant perspiration.

More and more people are beginning to realize that excessive exercise after the age of 40 is a menace and not in any sense of the word a benefit to health. After the age of 40 the human tissues begin to lose to some extent

their power of repair; the cells do not recuperate as readily from exhaustion and fatigue; the person is no longer fit for quarter-mile dashes or marathon runs.

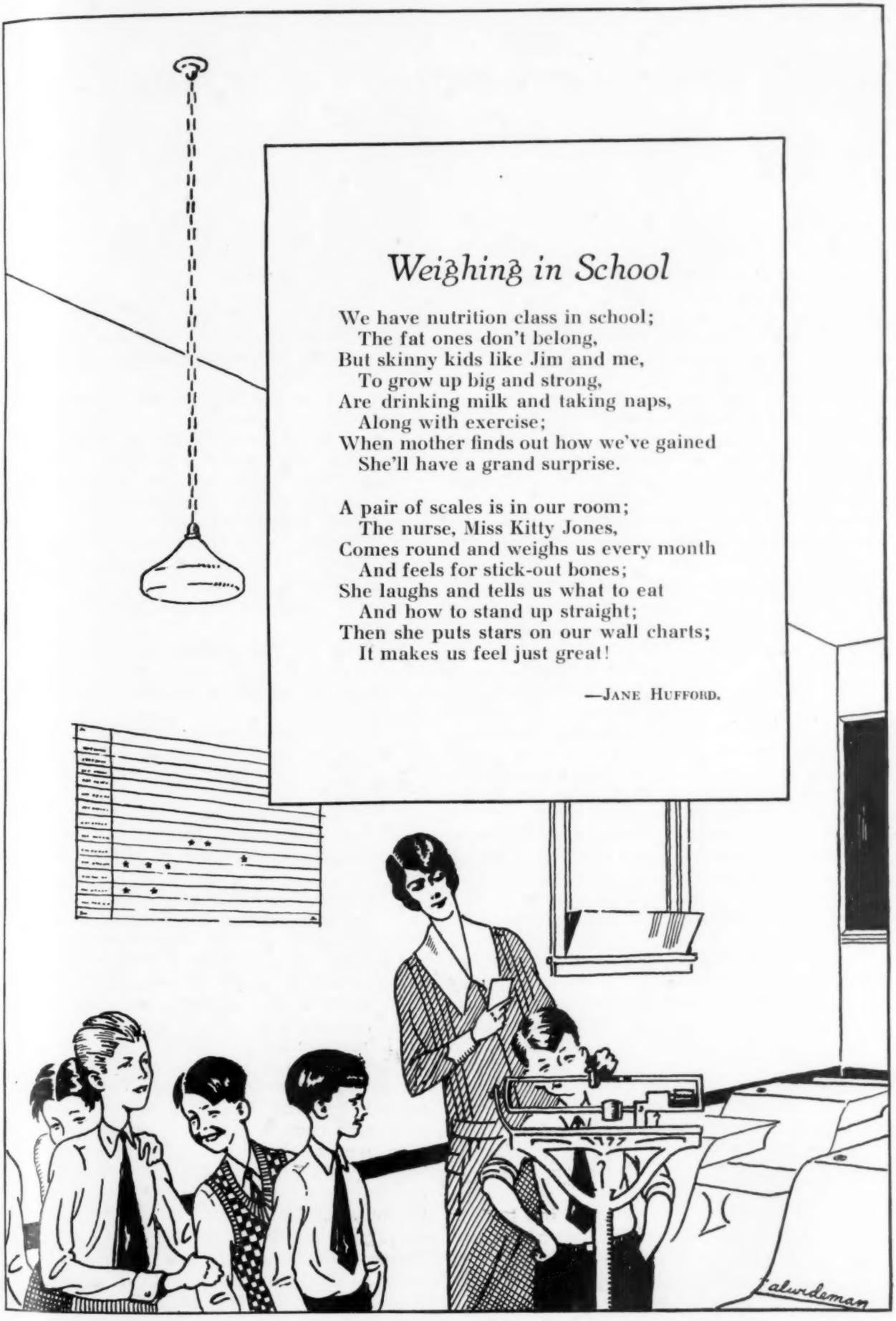
As is usually the case, the public betrays a vast interest in the course of the President's life. Hence it is that exploiters of one type or another try to profit in the sale of strange and complicated mechanical devices on the basis of such interest. When the King of England was given treatment with the ultraviolet rays during the course of his infection, the promoters of such devices promptly vaunted them, in many instances directly to the public, with excessive claims. When Mr. Coolidge achieved actual notoriety for his regular rides on the mechanical horse, the vibration machine came into popularity and, no doubt, many an organ and tissue was shaken loose from its moorings because the President liked vibration.

Already the periodicals devoted to the apotheosis of physical culture rather than sound personal hygiene and health habits are exploiting the statement of the physical trainer to the effect that President Hoover, during his South American voyage, subjected himself to a series of setting-up exercises not far different from Walter Camp's daily dozen. Apparently, since he is no longer limited to spending most of his time on board a ship, he is satisfied with somewhat less effort.

The President of the United States is free in the conduct of his personal hygiene to indulge himself in any type of health habit or medical care that he may wish. President Hoover, as president of the American Child Health Association, has shown himself an implicit believer in the accomplishments of modern medical science, a firm supporter of medical research, a clear thinker in relationship to the public health. It would seem to be the height of folly for any physical culture fanatic to attempt to gain for himself personal notoriety through unwarranted exploitation of what are alleged to be presidential leanings toward the schemes of the "big muscle boys."

SHARK BITE

SOMEHOW the notion persists that the shark will not attack a human being. Last November when Panamanians were celebrating Independence Day near Taboga Island, a young native dropped off a boat to swim. In sight of his companions he was attacked several times by a shark and was dead when they got him ashore. He was wounded on the chest and arm, fingers were severed, the abdominal wall was torn away, and one leg was amputated below the knee. The shark was captured after a long chase and in its stomach were found the victim's leg and part of his bathing suit. The natives call this kind of shark the "tintorera negra," or the "jaba," and they do not usually regard it as dangerous. It is black and the head is broad with seven rows of teeth in each jaw. This one was 9 feet long. The incident shows how serious the formation of false or hasty impressions may be when they concern individual or public safety or health.

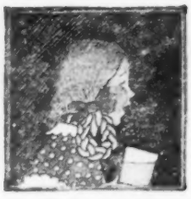


Weighing in School

We have nutrition class in school;
The fat ones don't belong,
But skinny kids like Jim and me,
To grow up big and strong,
Are drinking milk and taking naps,
Along with exercise;
When mother finds out how we've gained
She'll have a grand surprise.

A pair of scales is in our room;
The nurse, Miss Kitty Jones,
Comes round and weighs us every month
And feels for stick-out bones;
She laughs and tells us what to eat
And how to stand up straight;
Then she puts stars on our wall charts;
It makes us feel just great!

—JANE HUFFORD.



THE BUBBLING SPRING STARTS OUT TO SEE THE WORLD AND BE USEFUL

IDA SPAETH

ONCE an old Mountain shut up a dear little bubbling Spring in his dark tower. The dear little bubbling Spring tried to keep sweet and cheerful but it was a hard task. The tower was dark, he was lonesome, he couldn't bubble any more and he felt useless.

One day he was so lonesome that he cried and he cried. But crying did not seem to help, so he said, "I must find a way to get out of this dark place." Then he began to dig. Each day he would work at the great earth door to his prison and dig and dig until he was too tired to move another handful of dirt.

After he had been working for many months and was ready to give up trying, he saw a speck of light.

"Ah, I shall soon be out," said he joyfully, and he began to dig again with all his might. When he had dug a hole big enough to stick his head through, he peeped out cautiously to see if the old Mountain was anywhere in sight. Sure enough, there he was right beside the tower, lying on his stomach fast asleep.

"Now, if I can just steal down the Mountain's side without awakening him, all will be well."

Slowly, quietly, at first, the little Spring began to trickle, trickle down the side of the Mountain. Soon he began to run, then to tumble, tumble, splash, splash. On, on he rushed, falling over trees, rocks and boulders but hurrying as fast as his legs would carry him.

By and by he met a Singing Brook. "Oh, where are you going in such a hurry?" said the Singing Brook.

"I have been locked fast in a dark tower and now I am free once more. I am on my way to see the world and be useful."

"I should like to see the world and be useful, too. May I go with you?"

"Come right along, Singing Brook. Glad to have your company, but I am in a great hurry. You will have to run most of the way."

THE RESERVOIR GNOME

"I will run," said the Singing Brook. So away they ran, singing, bubbling, splashing, tumbling and laughing.

By and by they met a Creek winding his way in and out among the trees and bushes.

"Where are you going this fine morning?" said the Creek, when he spied the Spring and the Singing Brook.

"We are on our way to see the world and be useful."

"If you can make room for me, I should like to go with you," said the Winding Creek.

"Come right along; we will choose a wider path. But we are in a great hurry, and you will have to run most of the way."

"I will run," said the Winding Creek, and away they ran, the Spring, the Singing Brook and the Winding Creek.

After they had traveled several days they met a River.

"Where are you going this fine morning?" said the River.

"Oh, we are on our way to see the world and be useful."

"I have always wanted to see the world and be useful, but I am on my way to the sea," said the River. "We might travel part of the way together."

"Glad to have you; come right along, we will choose a wider path. But we are in a great hurry, and you will have to run most of the way."

"I will run," said the Deep River. So away they ran, the Spring, the Singing Brook, the Winding Creek and the Deep River.

One day as they were traveling along they spied a narrow tunnel on the side of the path. "Let us go in and explore" said the Winding Creek, who was an inquisitive little fellow. They all tried to crowd in, but the tunnel was large enough for only the Spring and the Singing Brook to go through. After they once got in they couldn't turn back, so the Deep River and the

THE FAUCET DOORKEEPER

"OH, WHAT LOVELY CLEAR WATER," SAID MARY, "I SHALL DRINK A WHOLE QUART OF IT TODAY."

Winding Creek had to go on their way to the sea without them.

Soon the Spring and the Singing Brook left the tunnel and found themselves in a beautiful courtyard. Everything was as quiet as quiet could be; there was not a ripple or a stir anywhere.

"I wonder who lives here," said the Singing Brook. Almost before he stopped talking, out stepped a crafty old gnome who guarded the courtyard.

"What are you doing in my reservoir?" growled the gnome.

"Oh, kind friend, pray do not be cross, we didn't mean any harm."

"I would send you out of here in a hurry if I could, but the tunnel is a one way tunnel, so I shall have to put up with you," said he crossly. "Mind you do no running, tumbling or splashing in my court. All must be quiet here."

"We will try our best to be quiet," said they together.

After they had been there several days, one night, while they were fast asleep, the crafty old gnome opened a huge iron trap door and pushed them through it into a dark, dark dungeon.

"Where are we? What has happened?" said the Singing Brook almost in tears.

"Don't cry, I will find a way out," said the Spring. "I was shut up in a dark tower and found my way out, and I am sure I can find my way out of here. We will start at once to dig."

The poor little Spring soon found, however, that their prison was not like the other one. It was made of iron pipes.

"Never fear, Singing Brook, we shall find a way out. There must be a door to this dungeon. We shall find the door." On and on they ran, going from one dark iron dungeon to another, each one smaller than the last. Finally they came to a little door. Singing Brook pounded with all his might, but no one opened it. Presently they heard a voice say, "Who is there?"

"It is the Singing Brook and the Bubbling Spring," they answered.

"And what do you want?" said the voice.

"Oh, we want to get out; please let us out," sobbed the Singing Brook.

"Where are you going?" asked the voice softly.

"We are on our way to see the world and be useful."

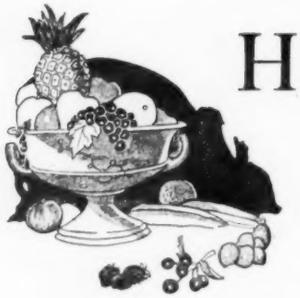
"I am only the Faucet door-keeper," said the voice. "I dare not open the door without orders. My master and mistress are asleep now. But if you will stand by the door and wait till 7 o'clock tomorrow morning you will have a chance to be useful and to get out of your dark prison."

Sure enough, the next morning at 7 o'clock sharp, Mistress Mary turned on the Faucet and out bubbled the little Spring.

"Oh, what lovely clear water," said Mary, "I shall drink a whole quart of it today."

"I wonder where all this water comes from," said William. "Just listen to it sing as it runs into the bath tub."

But Mary and William never knew what a hard time the little Spring and the Singing Brook had to get to them or how happy they were to have a chance to be useful.



HEALTH *and the* SCHOOL

Edited by

J. Mace Andress

67 Clyde Street, Newtonville, Mass.

How Shall I Spend My Summer Vacation?

IT WILL be only a few weeks until the summer vacation begins. To those outside of the teaching profession, and to not a few within, this long vacation is regarded as a sublime gift of the gods. For two or three months most schools will be closed. No other profession offers such a luxury and such an opportunity. How is the summer vacation to be spent? Shall we dream new dreams, travel in distant lands, devour new books, participate in stimulating experiences? The answer to this annual problem calls for careful self-analysis. The vacation should be planned in such a way that it will best minister to the needs of the individual.

Is there a need of rest and restored health? There may be a chance to go to an old farm and rusticate for a while; it is pleasant to watch things grow and to live out in the air and sunshine. One high school teacher goes to a ranch in the western mountains. Horseback riding, rest and sleep in this invigorating altitude develop a keen appetite, a bronzed complexion and sturdy muscles. How eagerly she will approach her work in September!

It may be that our work has become a deadly routine. We are in danger of losing our mental health because we are in a rut that has been worn for so many years that we can barely see over the edge of it. We need to force new brain paths. Perhaps we need to go to summer school to get new ideas. It may not be to apply ourselves to our own specialty but to come in contact with a broader field of inquiry, which will lift us out of the old regimen to a height at which we can catch a new perspective of our work and thus return to it with new purposes and ideals.

We may need new personal contacts. Perhaps we have tended to develop a shut-in personality, to build up a self-satisfied world within our own minds until it becomes increasingly difficult to understand and to get along with other persons. We have become so enamored of the opinion that our ideas are best that we have ceased to grow. Not to grow is to recede. We need to mingle with others. Perhaps we may best do that by travel or by trying our hands at a new and entirely different occupation.

There are innumerable ways in which the teacher may spend the long summer months. It is time that should not be lost. It is possible to combine real pleasure and an experience that will give knowledge, recreation and inspiration to an extent that the teacher will look forward with eagerness to the work of the new year.

The general character of the summer vacation brings to the school itself a new and in some ways a fascinating problem in health education. In the summer America is a great vacation land. Thousands of children go to camp. Through trains and steamboats become congested. Millions of families betake themselves to wheels and for a period of days or weeks forget the humdrum of daily living in a search for adventure. It is a glorious quest but not always a safe one. There is the ever-present danger from motor fatalities and infected water and milk supplies.

Boys and girls in our public schools need to be taught how to have a safe and happy vacation. This problem may be approached through interesting projects that can be correlated with art, civics, history and hygiene.

There may be a chance for the teacher to go to an old farm and rusticate for a while.

In the lower grades children may tell about their vacations of the previous summer and what they can do to help their parents in promoting a healthful vacation. Although children are limited in their freedom to plan vacations many of the older pupils may be away from home and thrown largely on their own responsibility. Most of them will accompany the family. The instruction that they receive at school is likely to be carried home to the parents.

At school the children in the upper grades and high school may work out definite plans for a specific vacation. To do this they may consult maps, books, newspapers, magazines, railroad and steamboat guides. In making their plans they will carefully consider the particular dangers to health that such a vacation may entail and how they may be met successfully; weather, means of travel, food supplies, camp sanitation, emergencies and inoculations against disease are among the topics to be considered.

The love of travel, even in imagination, is so great that children will seize this opportunity with vigor. In my imagination I can see some beautiful booklets. On the covers are titles like these: "A Hike Through the White Mountains," "An Auto Trip to Glacier Park," and "Working on a Ranch in Montana." All the teacher needs to do is to start this scheme and the youngsters will see it through.

What are we teachers to do between now and the end of school to make the coming summer vacation more valuable for ourselves and our pupils?

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

CHILDREN'S SPECIAL TO HEALTHVILLE

Through Service Leaving Cleantown at 7 a. m.

7 a. m.—Clean Town.
Be sure to pack soap, towel, comb and tooth brush.

9 a. m.—Waterville.
Stop here for fresh drinking water.

10:30 a. m.—Milk City.
Lunch of crackers and milk will be served here.

12 a. m.—Vegetable Farms.
A stop will be made here for dinner of soup, meat, vegetables and a fruit dessert.

1 p. m.—Play Town.
A short stay will be made here to enjoy the fresh air and sunshine.

3 p. m.—Fruit Center.
Apples, oranges and other fruits may be bought here.

5 p. m.—Sleepy Hollow.
A light supper will be served here.

7 p. m.—Healthville.
Everybody to bed.

All must be up at 7 a. m. to begin their vacation in Healthville.

The children in grade 2 had been trying faithfully to keep their health rules all the year. The results were evident. The few in the red class, those less than 10 per cent underweight, had passed into the blue class.

The majority in the blue class, within 10 per cent of normal weight, had passed into the white class, showing that they were up to the weight required for their age and height.

Still we thought our blue class could be smaller and we wanted to make provision for the approaching vacation season when the temptation would be for the children to let up in their health habits and thus lose much of the benefit that they had gained during the school year.

The following plan suggested itself:

With their large building blocks, the children built an automobile, which was named—

The Children's Special to Healthville.

This was due to start the day after school closed, to take the children for a summer vacation in Healthville.

All who were in the white class were given through tickets.

Each one made a plasticine figure of himself and placed it in the auto, ready for the start.

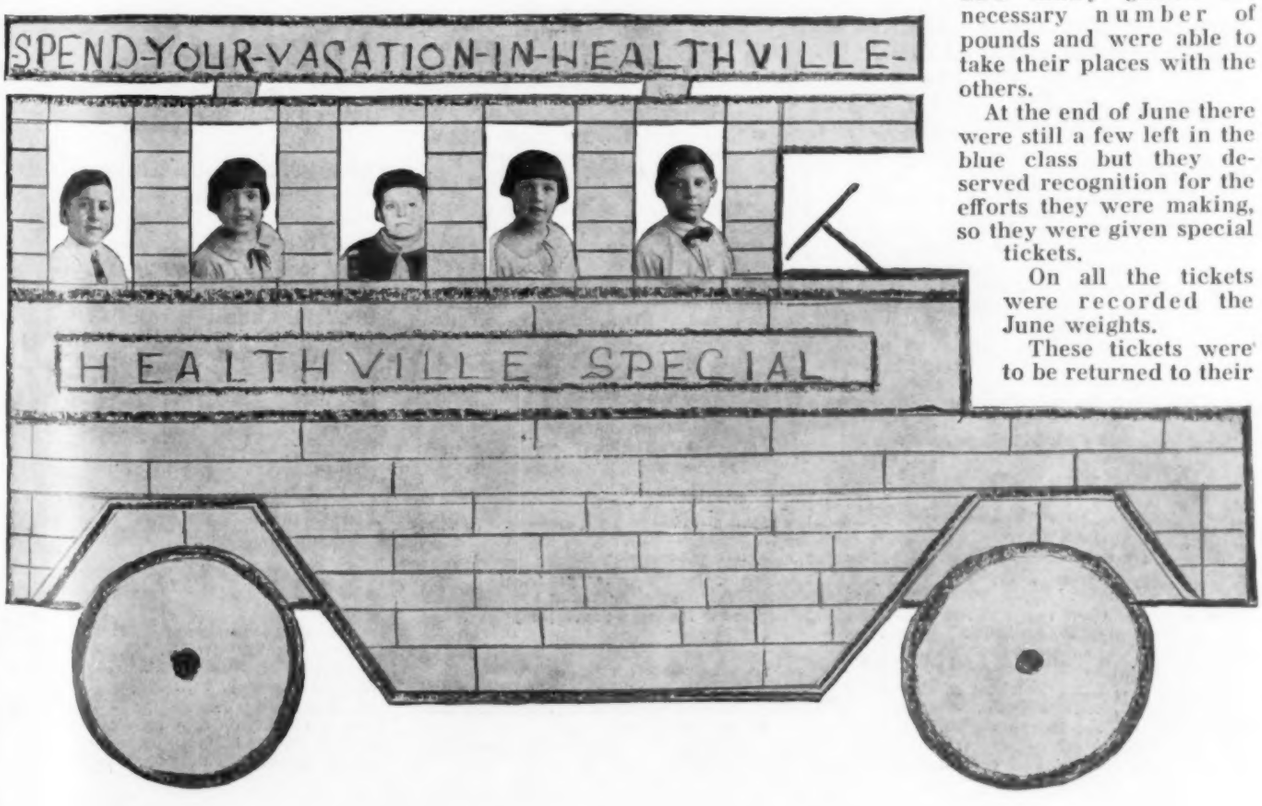
The auto had accommodations for everybody in the class.

Those who were not yet up to the required weight worked hard and many gained the necessary number of pounds and were able to take their places with the others.

At the end of June there were still a few left in the blue class but they deserved recognition for the efforts they were making, so they were given special tickets.

On all the tickets were recorded the June weights.

These tickets were to be returned to their



teacher the first weighing day in September when their new weight would be again recorded.

If they had gained, it showed that they had been keeping their rules carefully during the summer and were invited to return to Healthland for their next vacation.

This was a simple project, but had these two valuable outcomes: (1) It brought more children up to weight before the close of the school year; and (2) it gave them an incentive to watch over their health habits during the summer months.

MAUD C. SULLIVAN,
School No. 2,
Newton, Mass.

HOW TO ORGANIZE AND OPERATE HEALTH CLUBS

REQUESTS for information about health clubs which reach this department indicate that this method of health teaching appeals to both teachers and pupils. Teachers find that pupils may be led to practice health habits in this way much more effectively than they can through more formal methods of teaching. Children enjoy the chance for self-expression and leadership.

Miss A. May Goughler of Norristown, Pa., has worked out in outline form some of the best suggestions on health clubs that we have seen. This outline is clear, definite and practical. It is an excellent example of what a short school document of this type ought to be. We reproduce it in full:

SUGGESTIONS FOR ORGANIZATION AND OPERATION OF HEALTH CLUBS IN THE FOURTH, FIFTH AND SIXTH GRADES

I. ORGANIZATION:

A. Preparation.

1. Work up sentiment—
   - Teacher gives talk on clubs—Kiwanis, Rotary, Lions, etc. Describes a meeting—songs, speeches, projects.
   - Object: To make the world better (service).
   - Method: Things get done more easily if every one helps (cooperation).
   - What do we need done in our school?
   - Would a club help us to do it? How?
   - (A health club helps to make school safer.)
2. Acquaint with machinery—
   - President: To take charge.
   - Vice-President: To take charge in absence of president.
   - Secretary: To assist the president.
   - (Treasurer usually not necessary and unwise unless club runs very smoothly.)
   - Qualities—
     - (a) Must be clear thinkers.
     - (b) Must be good workers.
     - (c) Must be plain talkers.
     - (d) Must be safe (clean of person and clothing).
     - At the start do not emphasize physical qualities lest the weakling develop an inferiority complex. Self-improvement for all is the goal.
3. Hold election, teacher presiding.
   - (a) Nomination (use parliamentary form).
     - Ask children to think of the type of boy or girl spoken of in last lesson.
   - (b) Voting—
     1. How to vote.
     2. Honesty in election.
        - Some children think that to be fair they should vote for all; some are confused.

B. Develop procedure—

1. Meetings—weekly. Special meetings on call of president when the help of the club is needed.
2. Committees—
   - (a) Inspection—to assist and report on morning inspection.
   - (b) Blackboard—to keep boards, erasers and trays clean.
   - (c) Room—to keep floors, window sills and desks in order.
   - (d) Milk—to collect money, pay milkman and supervise lunch.
   - (e) Special—as required.

II. OPERATION:

1. Report of inspectors.
   - Appointment of new inspectors. All appointments for one week only.
2. Report of committees.
   - Criticisms by president—new appointments.
3. Old business.
4. New business.
   - Teacher or visitor is presented and asked to speak.
5. Adjournment.

The teacher is the biggest factor in the success or failure of a health club.

She should:

1. Direct when necessary but never dominate.
2. Bring matters before the club but allow the club to dispose of the matter.
3. Use her floor and voting privileges to sway opinion.

For efficiency's sake—Go slowly.

For literature's sake—Use no parodies on Mother Goose. (A splendid correlation of health and Mother Goose is worked out in "The Health Guard Brownie," by Moulton, published by Little, Brown & Co.)

Get the idea across that the children really have something to do and are not being entertained. Function, not fuss, is the idea.

A few suggested club projects for the sake of health.

- Working for a clean class.
- Working for a clean basement.
- Working for a clean yard.
- Telling other rooms about club objectives and enlisting their cooperation.
- Health posters.
- Health poems.
- Health stories.
- Health play.
- Club song.

All are worked up outside of club, but plans are made and reports are given at club meetings.

Teacher's Criterin for Judging Progress

1. Is there evidence of increasing initiative?
2. Are the pupils growing in poise?
3. Are they using better judgment?
4. Is social discipline being strengthened?
5. Are the leaders developing executive ability?
6. Are the individual members feeling a responsibility for group welfare?
7. Are the children keen in applying health principles in the every-day situations of the classroom?
8. Am I seeing that their health knowledge is scientific?

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

THE chapters in this fascinating book on physiology[1] represent the substance of a course of lectures the author gave to an audience of boys and girls, men and women at the Royal Institution. The volume considers the human body throughout from the somewhat novel point of view of the mechanical engineer. The reader is introduced to the human body as a complete living and moving machine. Unlike many of the health books designed to appeal to a popular audience, it moves along naturally. One does not feel that the author is under strain to make his work popular.

Although the book in its lecture form was addressed to a "juvenile auditory," it should possess real value for teachers and students of elementary physiology. High school teachers would get some valuable suggestions from this volume, and grade teachers who want a fresh and illuminating development of physiology will not read it in vain. By all means add it to your school library.

THERE is no more inspiring biography in the history of medicine than the autobiography of Dr. Trudeau.[2] It is not only the story of a great physician but of a great man and benefactor to the human race. It should be read by every teacher and student of health. The occasion of its being reviewed here is that the National Tuberculosis Association, 370 Seventh Avenue, New York, is offering this excellent reprint for $1. Is it in your school library?

ONE of the foremost objectives of physical education is the inculcation of correct habits of posture. It is therefore necessary to have some way of measuring posture so that progress may be recorded accurately and the results in different school systems may be compared. Dr. Brownell presents in this thesis[3] a scale for ninth grade boys which has been worked out according to the most modern methods of educational measurement. In the course of his study the silhouettes of 2,000 ninth grade boys were collected.

1. The Engines of the Human Body. By Sir Arthur Keith. Pp. 354. Revised and enlarged. J. B. Lippincott, Philadelphia, 1925.

2. An Autobiography. By Edward Livingston Trudeau, M.D. Pp. 322. Published for the National Tuberculosis Association by Doubleday, Doran & Company, Inc., 1928.

3. A Scale for Measuring the Antero-Posterior Posture of Ninth Grade Boys and Girls. By Clifford Brownell, Ph.D. Pp. 52. Teachers College, Columbia University, New York, 1928.

This publication should be of special interest to students and supervisors of physical education.

THE authors of "Play Day—The Spirit of Sport"[4] are to be congratulated on this interesting and practical book. California was the first state to put on play days in an extensive and successful way. The theory was markedly different from the old fashioned idea of one star team playing in competition with another star team. Such a play could involve only a few children. The slogan of play day was "a team for every one and every one on a team." This new program means the democracy of athletics since it offers to all full and equal opportunity. How is this ideal to be carried out? This booklet attempts to answer just this question.

Mrs. Herbert Hoover writes the foreword, explaining the significance of play day. The pages that follow take up in detail the technic of organizing play days. The discussions on theory are brief and much to the point but what will interest supervisors of physical education and teachers even more are the chapters on recent successful play days. Anybody who wishes to put on a play day will find helpful suggestions in this attractive publication.

IN "HEALTH, Safety and Fire Prevention."[5] Miss Digney has compiled programs, projects, plays and devices for the building of health and the teaching of safety and fire prevention rules. These contributions were worked out by various teachers in the elementary grades. The compiler has failed to tell specifically the grade in which each contribution may be used.

Much of the material presented is mechanical and the psychology is far from sound. There are pages devoted to a mere recital of rules. Page 93 has a list of rules all beginning with "Don't." There is a consensus of opinion among educators that it is unnecessary and undesirable to emphasize the matter of germs when teaching health to younger children. It arouses fear and makes the teaching of health repulsive. Yet this antiquated form of health teaching mars what might otherwise be a helpful publication. From the point of view of developing wholesome personalities and healthful attitudes, think of a lesson that proceeds thus:

When Susie came home from school that day, something came with her.

It was a little germ.

The germ was in Susie's throat.

It liked Susie's throat.

There were soft cushions and nice hiding places there.

The good fresh air thought something was wrong.

It shook the window and rattled the catch all night.

Not one little crack could it find.

The next morning that little germ had more brothers and sisters than you could count in a week.

Soon the doctor came.

Then the nurse came.

They opened the windows.

It was too late.

Finally we are given to understand that all this probably happened because the little girl did not sleep with her window open.

Notwithstanding some serious defects the book contains much that is worth while if one knows what to choose.

4. P. Ethel Perrin and Grace Turner. Pp. 77. American Child Health Association, New York, 1929.

5. P. Katherine M. Digney. Pp. 127. Educational Publishing Company, Boston, 1928.

TEACHERS' QUESTIONS

SUGGESTED READINGS IN MENTAL HYGIENE

To the School Editor:—In normal school I had a course in psychology and also one in physiology and hygiene, but in neither of these courses was there anything on mental health. I am a second grade teacher and feel the need of becoming fairly intelligent on this subject. Would you kindly suggest some reading that I might pursue with profit?

B. L., Michigan.

Answer.—This teacher's ambition to know more about mental hygiene is commendable. The subject offers many helpful hints not only in teaching children but also in the regulation of one's own life.

A good book to start with is "Your Mind and You" by George K. Pratt, M.D. (Funk and Wagnalls Company, New York). This little book, which sells for 30 cents and contains about seventy-five pages, gives a general survey of the field in language that is easily understood.

The teacher in the lower grades will be greatly interested in "The Everyday Problems of the Everyday Child" by Douglas A. Thom, M.D. (D. Appleton & Co., New York). Dr. Thom is a pioneer in the field of habit clinics. From a broad field of experience Dr. Thom describes through case studies the way children become fussy about their food, develop tantrums and other forms of maladjustment during the preschool years. He tells how many of the cases presented were cured.

As a third book "Great Teachers and Mental Health" by William H. Burnham (D. Appleton & Co., New York) is recommended. Dr. Burnham is the pioneer scholar and investigator in this field. He reviews in interesting fashion the lives, educational philosophy and practice of a few of the world's greatest schoolmasters from the point of view of their contribution to educational hygiene. This book will be a review in a novel way of some of the history of education that is presented in normal school. If a teacher likes this book she will want to push on to Dr. Burnham's masterpiece, a larger and heavier volume, "The Normal Mind" (D. Appleton & Co., New York). This presents in a general way mental hygiene for the normal child.

The maladjustments of school children are considered in "Mental Conflicts and Misconduct" by William Healy (Little, Brown and Company) or in that highly entertaining and worth while book, "The Psychology of the Unadjusted School Child," by J. B. Morgan (The Macmillan Company, New York).

If the teacher has access to a good library she may find there the magazine *Mental Hygiene*, a quarterly publication containing many special articles and excellent reviews of books in this field. The National Committee for Mental Hygiene (370 Seventh Avenue, New York), which publishes *Mental Hygiene*, also issues monthly the *Mental Hygiene Bulletin* (50 cents per year) and many pamphlets that can be secured free or at a nominal price. One may write for a catalogue.

Excellent articles on mental health are appearing from time to time in HYGEIA.

MICROSCOPES

To the School Editor:—I am teaching in the seventh grade of a village school. My class in hygiene interests me very much, but I wish I might use a microscope so that I could show the children muscle cells, a section of bone or the bacteria in a drop of stagnant water. It would mean much more to them than the information they can get by reading their text, looking at the illustrations or hearing me talk.

T. M., Colorado.

Answer.—The teacher is right about the value of a microscope in teaching hygiene in the upper grades. Several firms dealing in optical goods describe all grades in their catalogues. The teacher can prepare his own material for the microscope or can buy slides for a small amount. Children who have the privilege of using a microscope have a chance to get a real thrill out of the wonders of science. Nerve cells and red corpuscles will have a different meaning to them after such observations. J. M. A.

New Books *on* Health

Reviewed

By

Morris Fishbein, M.D.

NUTRITION

By Walter H. Eddy. Pp. 237. Price, $2.50. The Williams and Wilkins Company, Baltimore, 1928.

SO RAPID is the accumulation of information regarding nutrition that new works appear daily to record the progress. In a recently published volume, Prof. Walter H. Eddy, who has contributed notably to investigation in this field, traces the important discoveries relative to the constituents of the human diet. His work opens logically with a study of the complete food from the point of view of energy, nutrient qualities, vitamins, digestibility and palatability.

In the next seven chapters each one of these important questions is carefully considered with emphasis on the function of particular food substances in the human diet. The various types of protein are given consideration and the fats and carbohydrates are emphasized as the energy-giving items in the diet. The general opinion seems to be that protein should supply not more than 15 per cent of calories per day and that the remaining 85 per cent must come from carbohydrates and fats. The inorganic salts are shown to be of importance particularly in relationship to their bone building qualities.

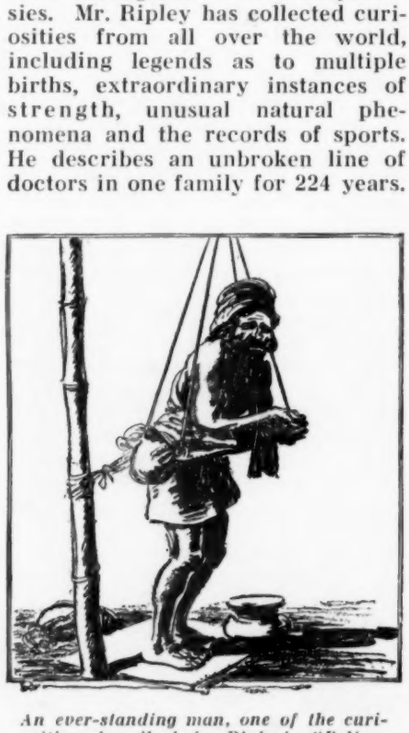
A special section deals with the acid and alkali balance. In health the blood is nearly neutral in reaction; in such diseases as diabetes and starvation the tendency is toward acid reaction. Fortunately the human body is provided with defensive agents which tend in the vast majority of circumstances to control this balance. To avoid indigestion, Professor Eddy recommends thorough chewing, exercise, the avoidance of too much carbohydrate, a sufficient amount of roughage and some care in selection of food substances. On the other hand, he says positively, "It is safe to assert that in very few instances are any food mixtures in themselves harmful to digestion."

Part 2 of this valuable work is concerned with the vitamin requirements. Professor Eddy traces the knowledge of this subject from the original observations of Hopkins through the work of Osborne and Mendel, through the contributions of the Japanese and the Dutch to the emphasis placed on these substances by Drummond and Funk. He traces indeed every aspect of our knowledge, including the effects on the vitamins of such processes as boiling, baking, canning and other methods of food preservation. It becomes increasingly evident that our knowledge of how the vitamins function is fragmentary and that much more must be learned before our information will be complete on this subject.

BELIEVE IT OR NOT!

By Robert L. Ripley. Pp. 172. Price, $2. Simon and Schuster, New York, 1929.

THE FACTS of life far surpass the imaginations of authors in their strangeness and idiosyncrasies. Mr. Ripley has collected curiosities from all over the world, including legends as to multiple births, extraordinary instances of strength, unusual natural phenomena and the records of sports. He describes an unbroken line of doctors in one family for 224 years.



An ever-standing man, one of the curiosities described in Ripley's "Believe It or Not!"

He tells of childbirth in children and very young girls and of historical eccentricities of famous geniuses. Any one who is interested in the remarkable phenomena of life and its strange variations will find Mr. Ripley's book a fascinating item and well enough documented so that at least the major portion of the book is dependable.

NUTS AND CITRUS FRUITS

By Francis C. Owen and Ellen M. Ramsay. Pp. 128. Price, 72 cents. F. A. Owen Publishing Company, Dansville, N. Y., 1928.

IN THIS volume two authors have collaborated to consider fully the development of all the various types of nuts and of citrus fruits used as portions of the human diet. The romance of discovery and the background of industry are fully developed in this work. The book lays less emphasis on the health aspects than on the story of development, but sufficient is said to give the average readers some indication of food values.

HEALTH RECORD

By Roy P. Forbes, M.D. Pp. 48. Richard G. Badger, Boston, 1929.

IT IS a part of modern science to place more emphasis on the history of the patient than was formerly assigned to such factors. The relationship of previous illnesses to subsequent complications is becoming more and more clear and it is realized that only a complete knowledge of the heredity and the biology of the patient can enable the physician to understand him satisfactorily.

In this book the author has made available an outline for the permanent record of necessary information and has supplied a statement of normal appearances for comparison. The book will be found useful by all who wish to be of assistance to the physician in the care of the patient.

BOOKS RECEIVED

MOTHER'S FIRST BOOK. A First Reader for Home Women. By Cora Wilson Stewart.

CARE OF THE MOUTH AND TEETH. By Harvey J. Burkhart, D.D.S.

News *and* Views

From the

FIELD OF HEALTH

ENGLAND TO HAVE FIRST CHILD GUIDANCE CLINIC

England's first child guidance clinic is to be instituted shortly in London for an experimental period of three years under the sponsorship of the Commonwealth Fund of New York.

To this clinic will be sent nervous, unstable, maladjusted and difficult children of school and preschool age. A staff of psychiatrists, psychologists and social workers will study the children and attempt to devise treatment to bring them up to normal condition if possible.

During the past year the Child Guidance Council of Great Britain has sent five social workers to the United States on Commonwealth Fund fellowships for training along mental hygiene lines and has fostered observational trips by a number of persons, according to the annual report of the Fund.

WISCONSIN GIRLS SEEK HEALTH TRAIL

The disturbing discovery that girls of high school and college age have not shared in the declining death rate from tuberculosis has aroused health organizations to special efforts to reach those of this group.

Physicians are generally agreed that the germ of tuberculosis is abetted in its disastrous work by lack of sleep, the wrong kind of food, too little exercise and unsuitable clothing, comments an article in *The Survey* describing a campaign just being completed by the Wisconsin Anti-Tuberculosis Association.

The Wisconsin plan follows in general the health trail idea used in Cleveland in 1927. A four months' program has been carried out on a state-wide scale. Local tuberculosis associations, county nurses, Y. W. C. A., high schools, vocational schools and health workers in factories joined eagerly in the plan. A nurse on an Indian reservation wrote: "I can think of no one so much in need of this health program as these Indian girls. Because of this need and my interest in the health work, I would like to assist them in taking advantage of it."

The program was divided into four phases. In February the emphasis was on proper food habits; in March, on rest and exercise; in April, on healthful clothes; and in May, on the value of sunshine, the special purpose being to show that good health is a means to the things that every girl desires —good looks, charm and wide popularity.

PHYSICIAN FILMS GROWTH OF CANCER CELLS

Cancer is perhaps the most baffling of all diseases. Much has been learned during years of research, but the final solution has yet to be evolved. The solution of the problem appears at present to depend on the discovery of some difference between a cancer cell and a normal cell when living under identical conditions. The difficulty lies in getting a culture medium in which both normal cells and cancer cells will continue to grow, a bulletin of the American Society for the Control of Cancer explains.

A London physician, Dr. R. G. Canti, has been able to obtain satisfactory growths and in addition has photographed the growing cells with a motion picture camera. The pictures were taken slowly so as to show the changes and movements in the cells, exposures being made at intervals of from three to sixty seconds.

The resulting film demonstrates interestingly one of the ways in which scientists are studying cancer cells to find out why they grow so rapidly and in a manner so different from that of normal cells. Not only does the film show growing and dividing cells but it shows clearly the eating up of one cell by another, or phagocytosis, as the process is technically termed.

MENINGITIS SPREADS AMONG FILIPINOS

Sixty cases of epidemic meningitis with twenty-four deaths, principally among the Filipino population, recently occurred in San Francisco. According to the bulletin of the California state department of health, the disease was introduced by newly arrived Filipinos who were suffering from the disease when they landed.

The crowded living conditions of the Filipinos and the fact that many are employed in hospitals and public institutions led the city health officer to warn their employers of the menace to patients.

He recommended that the hospital superintendents have tests made at once on all Filipino help for the purpose of discovering carriers. He further advised them not to engage new Filipino help unless the applicants presented certificates showing that they were not carriers of the disease and offered the services of the health department in making examinations.

MOUNTAIN HEALTH WORK ROUTS TRACHOMA

Trachoma is on the retreat in the mountains of Kentucky as a result of increased medical facilities and widespread education on matters of hygiene, according to a report to the National Society for the Prevention of Blindness. It is estimated that the number of sufferers has been reduced from 50,000 to less than 3,000.

The mountaineers have been taught the symptoms of trachoma. They have been taught also what constitutes a nutritious diet and the importance of food values. Twenty years ago there were some counties without a single doctor. Now there are many health units in the mountain counties and the trachoma victims have access to an excellent trachoma hospital in Richmond.

Trachoma is a disease of the eyelids that can be identified by such things as intolerance to light, thickened eyelids and uncontrollable tears. It is primarily a disease that requires surgical treatment, but good diet and general hygiene are factors essential to satisfactory progress.

Pacific and Atlantic

GARDEN PLOTTING

The four participants in this plot were pictured at the recent Parents' Exposition in New York. An instructor from the School Gardens Association of the board of education is teaching boy visitors a few facts they may try out in their own home garden plots.

Wide World Photos

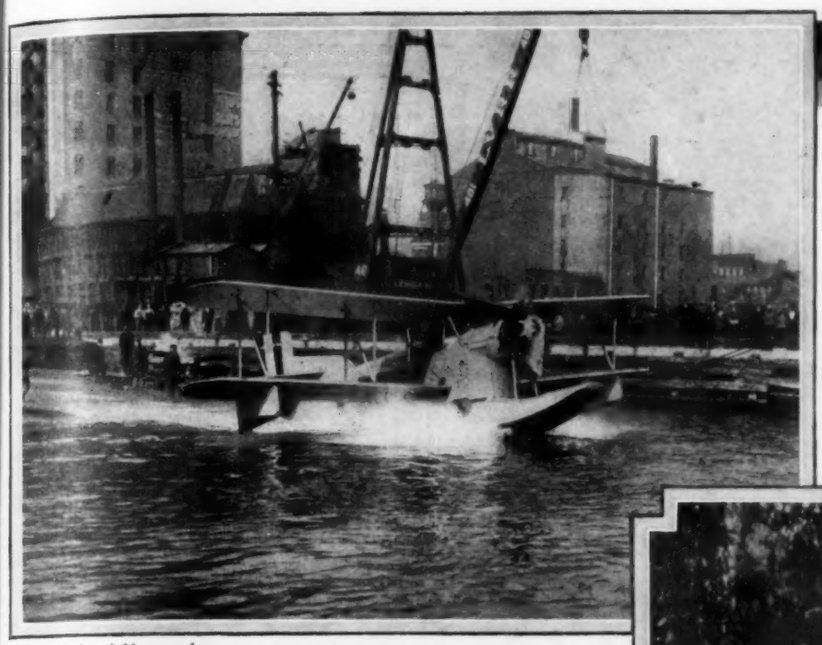
HER FIRST LOVING CUP

Scarcely past the stage of drinking her milk from a silver cup, Lucille Hyatt of Chicago was presented with a silver trophy for her swimming prowess. The baby champion is 3 years old and won the meet in which all the contestants were between the ages of 3 and 6.

TO THE ARMY NURSES
FROM 1861 TO 1865
ANGELS OF MERCY AND LIFE
AMID SCENES OF CONFLICT AND DEATH
A TRIBUTE OF HONOR AND GRATITUDE
FROM THE MASSACHUSETTS DEPARTMENT
DAUGHTERS OF VETERANS
1914

Pacific and Atlantic

"ANGELS OF MERCY AND LIFE AMID SCENES OF CONFLICT AND DEATH" were the Civil War nurses to whose memory this monument was recently unveiled.



International Newsreel

MARINE CORPS GETS FLYING AMBULANCE

The first of a series of amphibian planes to be used as ambulances by the U. S. Marine Corps was recently delivered. The plane may be used as a cabin transport, seating eight passengers. By quickly removing the swivel chairs in the cabin, space is provided for two stretchers.

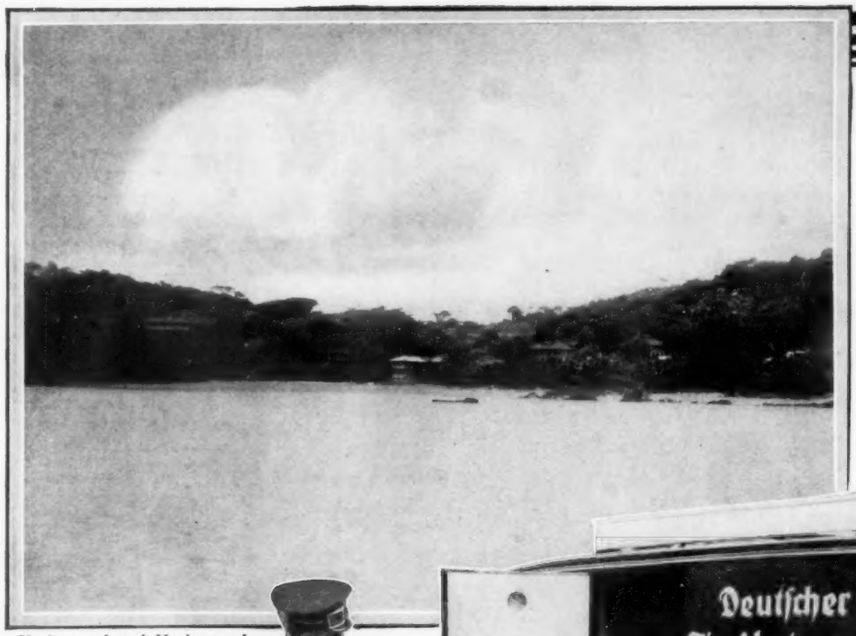
Pacific and Atlantic

MEXICAN FOWL PEDLER

Mexico is celebrated for revolutions and cock fights but its peaceful hens are as yet unsung. However, barnyard fowls are important items in the daily diet and this type of chicken and duck pedler is a common sight along the Mexican highways.

International Newsreel

MOSCOW HAS CHILDREN'S SANITARY COMMISSION; members are elected by their fellows to promote sanitary methods and habits.



Underwood and Underwood

LEPER COLONY IN PANAMA

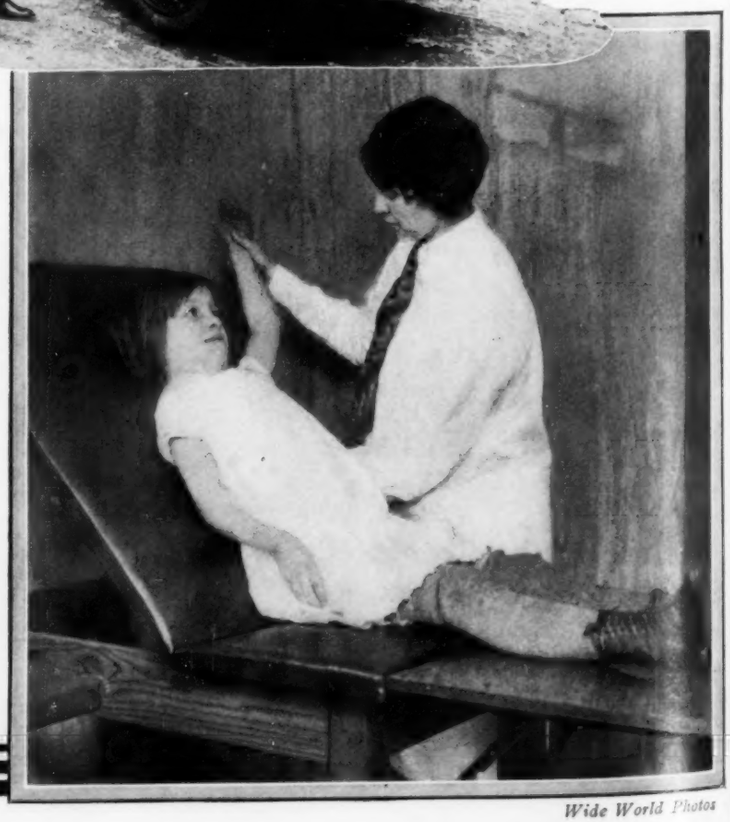
At Palo Seco overlooking the beautiful Bay of Panama is one of our government leper colonies. There are usually about 100 patients in the colony cottages, including Panamanians, Indians, Colombians, Chinese, Costa Ricans and an occasional white man.

INJURED DOGS AND CATS IN BERLIN RIDE IN THIS HANDSOME AMBULANCE to the nearest first aid station.

Pacific and Atlantic

EXERCISE IS PART OF CURE

Useless arms will be restored to action after months of exercise and massage. This little Chicago school girl is one of hundreds of crippled children who have simultaneously received an education and a correction of physical abnormalities at the Spalding School for handicapped children.



Wide World Photos

Questions *and* Answers

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed.

Cigaret Smoking

To the Editor:—I was told by a doctor that I could reduce weight by smoking five cigarets a day, the cigarets to take the place of a desire for sweets. What harm would result, if any?

A. S., Illinois.

Answer.—We would not advise the use of cigarets as a means of destroying the appetite for sweets. It is advisable to limit strictly one's allowance of sweets if there is a tendency to overweight.

To what extent cigaret smoking is harmful depends much on the individual and there is considerable difference of opinion among physicians.

Milk from Cows with Infectious Abortion

To the Editor:—Is there danger in using milk from a herd of cows in which there is infectious abortion? Also what danger is there from using milk from a cow that has aborted? This cow lost her calf one month before it was due.

A. J. McN., Iowa.

Answer.—The presence at any time in a herd of milch cows of one that has aborted is a standing menace of infection to the rest of the herd, as in all likelihood she is a definite carrier of the infectious agent. The carrier condition may last from several years to the end of the life of the animal.

Furthermore, the use of raw milk, cream or butter from an aborted cow is unequivocally dangerous to the human being using them. The milk and butter can be made safe only by efficient pasteurization.

Superfluous Hair

To the Editor:—Is there a chemical way to remove superfluous hair?

J. C., New Hampshire.

Answer.—The portion of the hair shaft that projects beyond the surface of the skin may be removed by certain chemicals, among them barium sulphide, which is the active ingredient of many "hair removers." It does not destroy the roots of the hair, and therefore is not a permanent cure. There is no satisfactory method of destroying the hair follicles by a chemical.

Insulin Substitutes

To the Editor:—I am a diabetic patient and am using insulin as a treatment for the disease. I dread to use the needle for injections. Is Pancretone, a preparation made by the Wabash Chemical Company, a successful treatment for diabetes or is there any other successful treatment on record?

M. M., West Virginia.

Answer.—There are on the market no remedies to be taken by mouth that can be substituted for insulin. Two or three such remedies are now being scientifically investigated and there is hope that before many months one or more of these preparations can be used as a substitute or as a supplement to insulin, to lessen the frequency of injections of insulin. There is no evidence that Pancretone is of value and we cannot recommend its use.

Bloody Stools

To the Editor:—At times when my bowels move I pass blood. This was some time ago and I do not notice it at the present time. How would I become cured of this? I received a discharge from the army in 1919 because of nervousness. Would this cause the trouble or what is the cause?

W. S., Michigan.

Answer.—If the blood passed with the bowel movement is bright red it comes from the rectum or lower bowel. Blood coming from higher up in the bowel, as from an ulcer of the stomach, becomes disintegrated and dark in color by the time it is discharged.

In the absence of examination and careful study of the case, it is impossible to determine what is the cause of passing of blood. The inquirer should consult a good physician and abide by his advice.

Hives

To the Editor:—Ever since I had a double dose of antitoxin for diphtheria three or four years ago, I have had hives whenever I become overheated. Can you tell me if this condition can be cured?

C. M., Pennsylvania.

Answer.—Urticaria (hives) that is induced by sensitization is difficult to clear up and frequently recurs over a long period. No simple measures can be recommended. Complete relief may often be expected through treatment by a physician who has made a particular study of sensitization effects.

Change of Life

To the Editor:—What is the average length of time it takes a woman to pass through the change of life after the menstrual flow has decreased greatly? The person in question is unmarried and is 45 years old. Is this experience supposed to be easier for a single woman than for a married woman?

E. M. J., Virginia.

Answer.—The duration of the change of life is variable; from two to ten years, probably striking an average at from three to five years. It begins before the menses have ceased and continues for a variable period after their cessation. It is characterized chiefly by more or less instability, expressed chiefly in functional disturbances and psychic (nervous and emotional) impairment.

It is not easier for a single woman than a married one; indeed, the mother of children is likely to have a better grip on her emotional control than has the unmarried woman.

Multiple Sclerosis

To the Editor:—Is there any cure for multiple sclerosis?

L. V. C., Iowa.

Answer.—Multiple sclerosis is still one of the most baffling conditions. One of the reasons for difficulty in deciding that any method of treatment does good is that the disease shows many natural remissions in its course. Recently, on the theory that it may be caused by a spirochete, patients have been treated with malaria, as well as

with other foreign proteins. Some physicians report favorable results while others report little if any effect. The use of malaria is not without dangers and needs most careful supervision and study. The administration of some of the preparations of arsenic, either after malaria or without it, has also been recommended.

Cirrhosis of Liver

To the Editor:—Is there a cure for cirrhosis of the liver? What is the usual treatment for this trouble? Would you recommend diathermy treatments? Would the condition of the liver cause rheumatism? E. B., Canada.

Answer.—Cirrhosis of the liver may be of a number of types: (1) toxic, following acute poisoning with chloroform; (2) infectious; (3) pigmentary, in which coal particles reach the liver through the circulation; (4) syphilitic, and (5) alcoholic.

The treatment is for the most part of the symptoms; ascites, for example, being treated by tapping, by opening the abdomen as in operation, or by connecting the omentum with the abdominal wall, thus promoting collateral circulation to replace the circulation of the liver which is obstructed.

Another plan is to drain the fluid from the abdominal cavity into the connective tissues of the abdominal wall. We doubt that diathermy is of value in this condition.

It is unlikely that this condition would cause rheumatism.

Cotton Sensitization

To the Editor:—I am a sufferer from asthma. I have had laboratory tests, which show that many foods and some animal and miscellaneous proteins are poisonous to me. Most of these I can avoid with the exception of cotton. All cotton fabrics affect me. The persons who made the tests say they do not know of any sure serum or inoculation against cotton, how much it costs, how many inoculations would be required, or whether it will be a success or not. Can you give me any information about the nearest place I can be inoculated? Is there any chance for me to work up an immunity against cotton? G. S. R., Washington.

Answer.—We know of no serum for the desensitization of a person sensitive to cotton. The only thing of value in such a case is absolute avoidance of this protein.

While one would at first think that this is impractical, it is not so really: there are linen, wool, the different artificial silks and real silk to be used instead of cotton, and its avoidance is usually quite easily accomplished. Even though one has a protein or serum to use for desensitization, it is necessary for the patient to go on a regimen in which the protein is avoided completely, and when one has lived in this way for several months, most patients find it convenient to carry on for the rest of their lives under these circumstances.

When one has been free from symptoms produced by cotton for a matter of months or years occasional contact with the offending cotton does not produce symptoms, but continued contact will aggravate the sensitiveness to the point of production of symptoms in time.

Celery and Cheese

To the Editor:—Will you please inform me why celery and cheese make a bad combination? I was told by a doctor that it is the worst combination that one could eat. If this is true please tell me why and what happens in the body. H. H., California.

Answer.—There is no reason in the world why celery should not be eaten with cheese. A great many persons eat both of these articles at the same meal with relish and without bad results.

Bronchiectasis

To the Editor:—Will you give me information concerning the treatment of bronchiectasis by the introduction into the lungs of iodized poppy seed oil? Has the method proved successful? Is it dangerous? If there is tuberculosis present, does that make this treatment inadvisable? The method, as I have heard of it, consists in cocainizing the throat, then introducing through the trachea a mixture of poppy seed oil and iodine.

M.S.S., California.

Answer.—Iodized poppy seed oil, also known under the name of lipiodol, has in recent years been used a good deal for diagnostic purposes. When injected into the wind pipe and bronchial tubes, shadows are cast when an x-ray picture is taken, and in this manner it is possible to tell whether or not certain disease conditions are present. In cases of bronchiectasis, there are usually dilated spaces or cavities in the bronchial tubes filled with secretion. In these cases, the use of the iodized poppy seed oil may be dangerous because it causes considerable irritation. Some persons are susceptible to iodine, and if the oil stays a long time in the bronchial tubes, the iodine absorbed may cause irritation.

When definite tuberculosis is present most authorities consider it inadvisable to use lipiodol in the lungs. It will require considerably more investigation and study of the use of these various preparations in the lungs for the two conditions mentioned before definite conclusions regarding their efficacy can be reached.

Diabetes

To the Editor:—Does insulin permit a diabetic patient to eat whatever he chooses?

J. C., New Hampshire.

Answer.—Insulin does not permit the diabetic patient to eat whatever he chooses unless he restricts his choosing to foods which are in kind and amount suitable for him. The essential treatment of diabetes still consists in the regulation of the diet and the restriction of those foods that result in the excess of sugar in the blood and urine. Insulin makes it possible for the tissues to burn up or metabolize more carbohydrates than is possible without it, and so it is much easier to keep the diabetic patient sugar-free and at the same time supply him with sufficient nutritive material to meet his daily needs.

Anal Sphincters

To the Editor:—I am troubled with seemingly relaxed rectal or anal sphincters. When the bowels move the rectum has trouble sometimes in entirely emptying itself. Not often does anything leak through, but occasionally a slight odor is perceptible about the person. It is difficult to get the parts clean after a bowel movements. I am a man, 31 years old. Can anything be done to remedy this condition?

G. H., New Jersey.

Answer.—It would be impossible for a physician to advise treatment for such symptoms without making an examination to determine the condition present. An operation might be necessary to cure the condition.

Enlarged Thymus

To the Editor:—Do you have pamphlets or books on the thymus gland? Is x-ray the best treatment to get rid of an enlarged thymus? How long does it take? E. N., Pennsylvania.

Answer.—We know of no satisfactory pamphlet for the lay reader on glands, but a number have been published for the physician.

As to the use of the x-ray in enlarged thymus, there is much difference of opinion. Some physicians think that many cases of asthma and some other difficulties in early infancy are due to enlargement of the thymus and they therefore have used the x-ray to diminish the enlarged gland. Other physicians of experience and good

judgment are of the opinion that the symptoms seen in these infants in many cases can be accounted for on other grounds. They do not approve of the general use of the x-ray for this condition.

Reduction of Mortality from Disease

To the Editor:—What are the principal diseases new knowledge and better understanding of which have resulted in greatly reducing the loss of life caused by them? By what means has this decrease in mortality been brought about?

A. M. W., District of Columbia.

Answer.—The diseases in which the most important gains have been made in the matter of life saving may be placed in two groups, as follows: (1) diseases caused by the invasion of the body by micro-organisms, and (2) diseases due to defects of nutrition and metabolism.

In the first group, diseases of germ origin, the methods by which control has been obtained may be conveniently classified as follows:

1. Preventing the entrance into the body of the disease producing germs—asepsis and antisepsis.
2. Destruction or inhibition of the germs in the body by chemical agents.
3. Control of the avenues of transmission of disease germs—water, milk and other foods; insect carriers and animals that harbor them, and human carriers.
4. Production of specific immunity by vaccination or inoculation.
5. Increasing the individual's general resistance to infection by good hygiene, including rest and proper food.

The methods by which control has been gained over the diseases which formerly caused great loss of life may be graphically represented in a table such as is here presented.

Some progress has been made in the control of leprosy; the sleeping sickness of Africa; yaws, a tropical disease, and hookworm disease, but these are not such important life destroyers as those listed in the table.

Of the second, or metabolism group of diseases, the most important are scurvy, beriberi, pellagra, rickets, diabetes mellitus, disorders of the thyroid gland (exophthalmic goiter, hyperthyroidism, hypothyroidism, cretinism) and the diarrheal disorders of infancy.

A striking feature of the treatment of the diseases caused by some vitamin deficiency is the rapidity and completeness of the recovery that follows the administration of the needed vitamin.

In the case of insulin, the hormone derived from the pancreas affords prompt relief from the symptoms of the disease, which continues as long as the drug is supplied, but it does not restore the power of the patient's pancreas to elaborate its own insulin.

Nail-Biting

To the Editor:—Can you suggest some remedy for biting the finger nails? I am a boy 17 years old.

R. T., Indiana.

Answer.—It is difficult to curb a habit like biting the finger nails in a boy 17, except by will power. Of course, the young man can carry about with him some substance like the infusion of quassia or a solution of quinine (both bitter substances) which can be applied to the fingers and which would make the biting of the nails disagreeable. This often fails, however, because the confirmed nail biter will stand for almost any disagreeable taste.

Among children, fixing the arms so that the fingers cannot be brought to the mouth is often a method, but it would hardly do for a young man. If the boy will make up his mind to stop, and will wear gloves all the time, both indoors and out, he can break the habit.

Ulcer of the Stomach

To the Editor:—Are ulcer and cancer the same thing? Can ulcer of the stomach be cured? Is diet the only treatment for such a disease? Do you think changing climates and drinking different water would benefit one with this disease? I have heart trouble and ulcer of the stomach; my lungs also are affected. Do you think Colorado Springs would be too high for me? Does a high altitude really affect heart trouble unfavorably? N. M., Kentucky.

Answer.—Ulcer and cancer of the stomach are not the same, though many persons believe that cancer is the result in some cases of ulcer.

Changing of climate and drinking of different water would be of little avail in either condition. As to change of climate in a particular case, the patient should be guided by a competent physician.

Malady Resembling Cold

To the Editor:—A new malady has made its appearance in our town. The first symptoms are not unlike those of an ordinary cold, sneezing and a clear mucous discharge from the nose. Almost immediately the nose begins to swell and to redden and by the next day it is twice the normal size and very painful. In some cases wherever the discharge touched, small blisters appeared, though this condition did not exist far up in the nasal passages. The nostrils have had to be packed so as to protect the lips but in one of the three severe cases the lips became so swollen that the patient had to be fed with a tube. The most effective treatment seemed to be keeping the parts moist with an antiseptic solution. The condition does not appear to be contagious, for the cases were widely separated and with three exceptions they responded to simple treatment. R. E. B., Missouri.

Answer.—From the description of the patients that have nose upsets, in which there are small blisters on the upper lip, one would think of a streptococcus inflammation of the ethmoid cells, and the treatment outlined—a mild antiseptic nasal irrigation—would be helpful. It would be a good idea to apply some bland, soothing ointment to the nostrils and upper lip.

DISEASES THE FATALITY FROM WHICH HAS BEEN PREVENTED OR GREATLY REDUCED SINCE THE CIVIL WAR

	Preventing entrance of micro-organisms by asepsis or antisepsis	Destruction or inhibition of micro-organism in the body	Control of avenues of transmission of infectious germs through:			By vaccination or protective inoculations conferring specific immunity	Increasing general resistance to infection by good hygiene, etc.
			Water, milk and other foods	Insect carriers and animals harboring them	Human carriers		
Surgical infections, including tetanus	x					x (tetanus)	
Typhoid and paratyphoid			x	x (flies)	x	x	
Dysentery — amebic and bacillary			x			x	
Diphtheria					x	x	
Cholera			x		x	x	
Plague				x		x	
Scarlet fever						x	
Cerebrospinal meningitis, epidemic						x	
Tuberculosis							x
Malaria		x		x	x		
Yellow fever				x	x		
Syphilis		x					
Smallpox						x	
Measles						x	
Typhus fever				x			
Hydrophobia						x	

Syphilis

To the Editor:—Will you please explain just what the possibilities of my contracting syphilis are? I am a northern girl teaching in a mining camp in which there is a great amount of social disease and the teachers know what children have it. I am the home economics teacher. Is there danger from eating the food the children prepare or from working with them in their sewing? I have been drinking a quart of milk daily from a home in which it is known there is syphilis, although the case is not active. Some of the teachers will not drink this milk for fear of contracting the disease (the milk is tuberculin tested), but some of the rest of us think we may as well drink the milk as eat the food cooked by the negroes who probably have it. We are told that here 90 per cent of the population has social disease in some form. We all would appreciate a lucid explanation of just how great our dangers are and what precautions we can take to protect ourselves. Also, would the teaching experience under good conditions compensate us for the risks we are taking? We do welfare work and visit in the homes, too.

M. L., Louisiana.

Answer.—The microscopic parasite spirochete, the vital activities of which cause the reactions in the human body that are collectively termed syphilis, is found only in living human flesh and in fluids discharged from open sores on the skin or the mucous membranes lining the mouth, throat or other cavities opening out of the body. Unlike the parasites causing typhoid fever and tuberculosis, the spirochete does not live in the normal secretions—milk, urine, feces; it does not pass through the intact skin or mucous membrane of the syphilitic person and is not exhaled. It is promptly destroyed when the diseased fluid containing it is dried, grossly heated or cooled.

Inoculation of a second person with syphilis cannot occur so long as his skin and exposed mucous membranes are intact; yet the minutest abrasion of these coverings —a hang-nail, pin prick or crack in the lip—permits the entrance of this parasite. The feminine habit of promiscuously kissing infants is unwise; for the mouth and throat of the infant born with syphilis is prone to furnish the saliva with the parasites.

There is no recorded instance of the transfer of syphilis through food, drink or by inhalation; nearly all transfers occur through direct contact, in cohabitation or in kissing; only so long as the diseased fluid is moist, can it carry syphilis by indirect means. These means are numerous, some of them bizarre; the more obvious are drinking glasses, table utensils passed from mouth to mouth without washing, pipe stems, tooth brushes, nozzles of douche bags, unlaundered towels and personal linen.

Protection against syphilis in the professional duties of nurse or physician is secured (1) by wearing rubber gloves, or in lieu of these rubber finger cots, and by applying collodion to scratches; and (2) by extreme care in preventing contact with any article that may have been moistened with another's body fluids until such article has been washed with soap and hot water and dried.

Abscessed Teeth

To the Editor:—In the January issue of HYGEIA there appears a question and an answer concerning an abscessed tooth. The answer states, among other things, that the x-ray does not show an abscess. Is there any exception to this rule? I know a dentist who is in charge of a hospital clinic. He is positive that the x-ray does show abscesses. When a person has ten year old bridgework, consisting of four natural roots, removed in order to have a plate made, what is the usual length of time before the plate can be fitted and completed, provided that the person is in good physical condition and that the gums heal as they should? Is there anything better than salt and water with which to bathe the gums? Should the cheeks appear swollen after the extraction? When gas is administered as an anesthetic for the removal of bridgework, what are the general effects? Are there certain precautions to be taken? Do you think that a troublesome eye tooth could have any bearing on the hearing or could cause an uncomfortable nervous feeling in the muscle of the neck from the ear lobe down to the collar bone?

M. M. B., Pennsylvania.

Answer.—It is only fair to state again that the x-ray does not and cannot positively demonstrate an abscess.

In the extraction of roots for artificial teeth no definite time can be set when the gums will be in condition to receive the plate. The healing of gums after extraction is as variable as the weather reports in midwinter.

Ordinarily salt and water are quite satisfactory for bathing the gums.

Sometimes the cheeks may appear swollen after extraction of teeth, even when extraction has been done most carefully.

The troublesome eye tooth referred to might cause reflex symptoms of the nature indicated, but the probabilities are all against its creating a nervous feeling in the muscle of the neck. Nothing is impossible but this is highly improbable.

Excessive Thirst

To the Editor:—Ever since I was a baby I have been a fiend for water. I cannot seem to get enough. At a meal I almost always drink four glasses of either water or milk with cream in it. At night I drink 1½ or 2 quarts of water. I wake up thirsty and can't go to sleep till I've drunk my fill. Not only do I drink water at night and at meal time but also between meals. As our water is soft and as I am in perfect health I wonder if it hurts me to drink as much as I do. I smoke a pipe, but that doesn't have any effect on the amount I drink. I feel almost certain that I usually drink about 1½ or 2 gallons of water each twenty-four hours, probably more in the summer when I work more. Is there any danger in this habit?

P. A., South Dakota.

Answer.—It is possible that the inquirer has a disease known as diabetes insipidus, which is characterized by the passing of large quantities of urine and by extreme thirst, due to the lack of water in the tissues because of the free urination. It has been shown in many cases to be associated with a disorder of the pituitary gland. It would be wise to consult a good physician, preferably one who has had considerable experience with troubles of this sort, and follow his advice strictly.

Cold Sores and Canker Sores

To the Editor:—Please tell me what treatments are best for occasional canker sores in the mouth. Silver nitrate is hard to apply when they are far back in the mouth and leaves the spot very sore for a day or two. What can I do for cold sores, especially at the corner of the mouth where ugly scabs and cracking are likely to occur?

E. H. K., New York.

Answer.—Canker sores and cold sores are often associated with some general illness and the important thing is to ascertain what the disease is and direct treatment for that condition.

If a physician has advised the application of silver nitrate to the canker sores, it may be procured from the druggist, with the silver nitrate embedded in a long wooden handle. With this, one can reach almost any part of the mouth or throat.

Any physician can recommend remedies that are helpful in drying up lesions in cold sores.

Kitchen Accidents

—*happen in every home*

The slip of a knife today—a gash from a can or a jagged cut from a broken jar tomorrow, may lead to

dread infection

with unsightly scars, or loss of limb—even life itself.

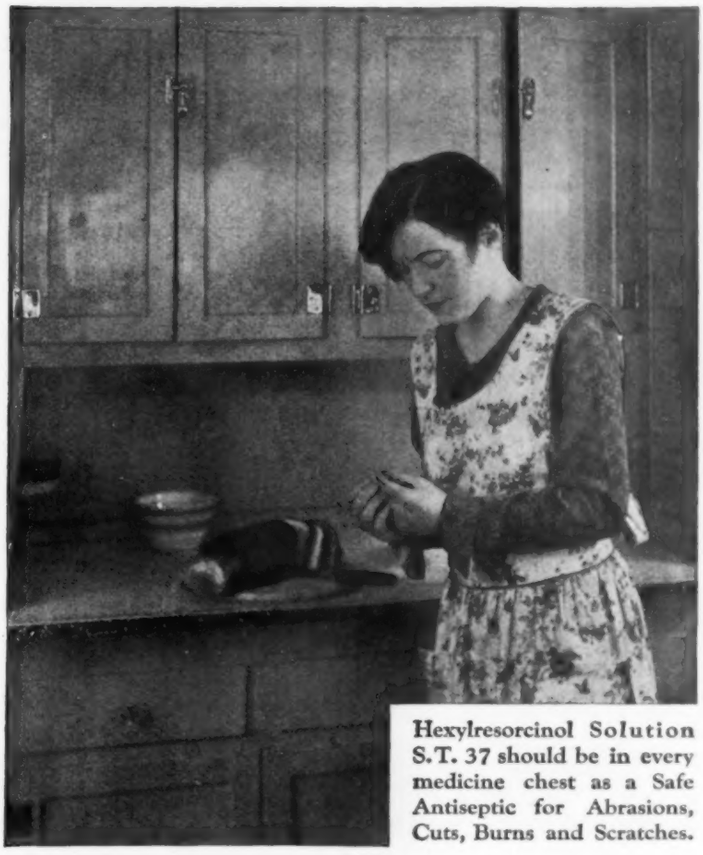
Be SAFE, apply Hexylresorcinol Solution S.T. 37 freely at once, bandage lightly keeping the dressing wet with the Solution—then call the doctor.

Hexylresorcinol Solution S. T. 37 kills germs on less than 15 seconds contact. It is astringent and healing. Does not stain, has no odor, and is absolutely harmless, even if accidentally swallowed.

The dangerous risk of keeping a deadly poison in the family medicine chest is unnecessary. Hexylresorcinol Solution S. T. 37 should be in every home as a Safe Antiseptic.

Physicians throughout the country use and recommend this great product of science.

Get a bottle today—be ready for an emergency.



Hexylresorcinol Solution S.T. 37 should be in every medicine chest as a Safe Antiseptic for Abrasions, Cuts, Burns and Scratches.

At your druggist's

3 and 12 ounce bottles.

Sharp & Dohme
Baltimore

Quality First Since 1860

Sharp & Dohme, Baltimore, Medical Department

Gentlemen:

Please send me FREE, trial bottle Hexylresorcinol Solution S. T. 37. (Liquor Hexylresorcinolis, 1-1000)

Name _____ *Street* _____

City _____ *State* _____ 3

Shaded where wanted for privacy or glare.

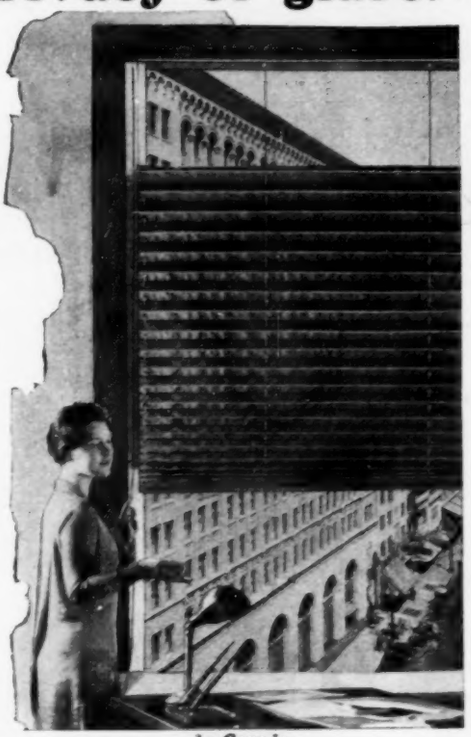
Light—
without deterring ventilation

Athey shades are ideal for Doctor, Dentist or Surgeon.

Athey Shades are not wooden slats and have no rollers, springs, catches or latches. They do not have to be jerked for adjustment. And because they may be lowered from the top, allow a flood of soft light to reach the back of the room. Besides being practical, they are the most beautiful and attractive shade ever devised.

Send for Catalog

ATHEY COMPANY
Representatives in Principal Cities
6157 W. 65th St., CHICAGO



In Canada
CRESSWELL-McINTOSH, Regd.
279 Seigneurs St., Montreal, Canada

Muffins *for* Diabetics

Palatable muffins and more than thirty other foods, each strictly starch-free, may be included in your diet when you use Listers casein-palmnut Dietetic Flour.

STRICTLY STARCH-FREE

STRICTLY SUGAR-FREE

Listers CASEIN-PALMNUT DIETETIC **Flour**

is strictly starch-free, self-rising and easily made into a variety of foods in any home. Recipes accompany each carton of flour. Large carton, Listers Flour (enough for 30 bakings) . $4.85.

Sold by leading druggists, fancy grocers or direct

LISTER BROS. INC. 41 E. 42nd St. NEW YORK, N. Y.

Bridgework and High Bite

To the Editor:—Some time ago I had some bridgework put in my mouth to replace two extracted teeth. Now I have a wrong bite, apparently because the bridgework is too high, although the dentist states that he cannot grind off any more of the bridgework or he will weaken the gold. Friends tell me that frequently the dentist can grind a little off of one's natural teeth opposite the bridgework to relieve the trouble. Is this advisable? Will this injure the enamel on the natural teeth to the extent of making them susceptible to decay? Is it possible for a wrong bite to be the cause of pains in and about the ears through pressure of the jawbones on the inner ears?

A. H., Iowa.

Answer.—Natural teeth can be ground slightly to relieve a high bite without injury, provided the enamel is not made too thin. Teeth seldom decay on the masticating surface as the result of grinding.

To cause pains in and about the ears the bite would have to be much out of the normal.

Tuberculosis

To the Editor:—I am a tuberculosis patient. My application to the state sanatorium was rejected, so I am trying to get better at home. What are some of the symptoms that are shown when tuberculosis is active? Should I take any exercise except short walks? What causes pains in the chest? I had hemorrhages of the lungs one week once or twice daily. That has been two weeks ago. There has not been blood in my sputum for more than three weeks. My temperature is only slightly above normal. My pulse is 96. I have lost 21 pounds since May, but I gain a pound once in a while now.

E. W., Texas.

Answer.—Two pamphlets on tuberculosis published by the American Medical Association may be helpful in establishing the proper conditions for a tuberculosis patient at home.

Perhaps the most constant early sign of tuberculosis is loss of weight and strength, with a slight fever in the afternoon, followed by coughing and expectoration. Night sweats and hemorrhage from the lungs, loss of appetite and other symptoms follow later.

The most important feature of the treatment of active tuberculosis is rest in bed. When the patient is sufficiently recovered to be able to be up and about is something that only a physician can determine after a careful examination and study of the case.

Heart Disease

To the Editor:—A patient now visiting in southern France has asked me about "taking the cure" at Bad Nauheim. He has heart disease. Can you give me any information regarding this place?

R. W. R., New Jersey.

Answer.—Bad Nauheim is a resort at which the spring waters come from the ground heavily charged with carbonic acid gas. As the pressure on the water in the ground is released, the carbonic acid gas ascends in little bubbles and one immersed in the water feels the movement of these bubbles against the skin. It is a pleasing sensation and results in many persons in a slight stimulation which causes the superficial blood vessels to dilate and so to contain more blood. This apparently withdraws blood from the deeper organs and so is helpful in certain forms of heart disease in which the heart muscle is weakened.

There are excellent physicians at Bad Nauheim, thoroughly familiar with the treatment of heart disease, who will be able to advise the patient as to possible benefits from the baths.

Breathing Sounds

To the Editor:—My baby, two years and three months old, makes a buzzing or wheezing sound with each breath, though the sound is not noticeable with deep breathing as in crying. This has been developing for the past few weeks. His temperature is normal and he is well developed and overweight for his age. Do you think his lungs are sound? The wheezing can be heard at times across the lower back and in the under arm region. He catches cold easily and has had three attacks this fall with fever and much coughing. The cough has not entirely gone. Could he be tuberculous and still be active and playful all day? How many hours should he spend outdoors each day?

B. D., Illinois.

Answer.—The production of sounds by the baby in breathing, such as buzzing, wheezing and crowing, is not uncommon even though there appears to be no disturbance of the general condition. It is not possible to determine the exact nature of this condition without an examination.

The breathing apparatus, of course, is not absolutely normal when such signs are present but there may be nothing serious the matter. The parents should certainly have the child examined by a competent physician and be advised as to the possible nature of the trouble.

2 great natural foods in 1 delicious dish~

Wheatena with milk! Two great *natural* body-builders—and one of the most delicious, nourishing, breakfast dishes you can serve your family.

Wheatena is the cereal made from the entire nut-brown wheat kernel. Served with milk, it supplies—not only starch for energy—not only bran for regulation—but also the *Vitamins* that promote growth and safeguard health . . the *Minerals* necessary for strong bones and sound teeth . . the *Proteins* that build muscle and tissue.

Priceless food elements! How fortunate that you can get them in such a wonderfully delicious and appetizing cereal. Wheatena is *quick-cooking*. Two minutes of boiling and bubbling and it's ready for the milk or cream (for babies, longer) at a cost of less than 1 cent a dish.

Doctors have recommended Wheatena for nearly 50 years—for babies—for children—for adults of all ages.

Try this recipe for health: Plenty of sunshine . . fresh air . . moderate exercise . . quiet sleep . . *Wheatena with milk.*

Wheatena

served with

MILK

The delicious nut-brown wheat cereal

Special Offer!

"Feeding the Child from Crib to College" is an entirely new kind of book for mothers—written by one of the most eminent child-health specialists in America. Absolutely authoritative. Only 10c brings you a copy. Please use coupon on right.

Wheatena sample FREE

☐ Check here and we'll send you a sample of Wheatena FREE.

☐ Check here—enclose 10c—and we'll send you a copy of the book.

The Wheatena Corporation
Wheatenaville, Rahway, New Jersey

Name.....

Address..... H 5-29

Baby's Drinking Water
Is a Matter of Vital Importance

Robust adults frequently suffer from a change of drinking water; tender babies should not be exposed to this risk.

Use *Poland Water* in the feeding bottle—it is always the same, bland and pure.

Literature Free on Request

POLAND SPRING COMPANY
680 Fifth Avenue *Dept. L* New York

For Children, Too!

Atlas Steam Vaporizer No. 111

Very practical for use in treatment of coughs, colds, whooping cough and croup. Produces a warm medicated vapor for inhalation; especially adaptable for treating children.

The DeVilbiss Company
Toledo, Ohio

Wanted!

HYGEIA AGENTS

Convert your spare time into cash

Liberal Commission and Bonus Paid to Representatives.

Make 1929 a Profitable Year! Send the Coupon Below:

HYGEIA Circulation Department,
535 N. Dearborn St., Chicago, Ill.
I am interested in your offer to HYGEIA representatives. Send me full details about your proposition.

Name.....
Address.....
.....
Present Occupation.....
Are you interested in full or part time work? .....
.....
When could you begin work?.....

Do You Need Health Material?
Send for free catalog—
"Publications Dealing with Medical Subjects of Interest to the Public"
American Medical Association, 535 N. Dearborn St., Chicago

Removing Moles

To the Editor:—Could you tell me the name of a doctor who could remove some small moles from the face without leaving a scar? My little son has three on his cheek, which seem to be getting larger, and I should not like scars left, as he is a handsome little chap. R. P., Illinois.

Answer.—We cannot recommend individual physicians. No physician can remove a mole from the face with absolute assurance that no scar will follow. The family doctor will be able to recommend a physician who gives his attention exclusively to diseases of the skin.

Cretinism

To the Editor:—Our child with possible cretinism responded rapidly to thyroid treatment, which was given about eighteen months ago but has now been discontinued. Does thyroid need to be given continually during life? In case our child should be a cretin, what would you advise at this time? I have heard that chiropractic is of benefit in nervous diseases; would it help our boy? He is improving rapidly in talking and learning but in comparison with other children of his age we can see he is backward. The boy has a habit of slobbering at times. What is the cause of this and the remedy? As yet, we have been unsuccessful in breaking him of the bed-wetting habit. How can I remedy this? Are these habits connected with cretinism? R. H. M., Illinois.

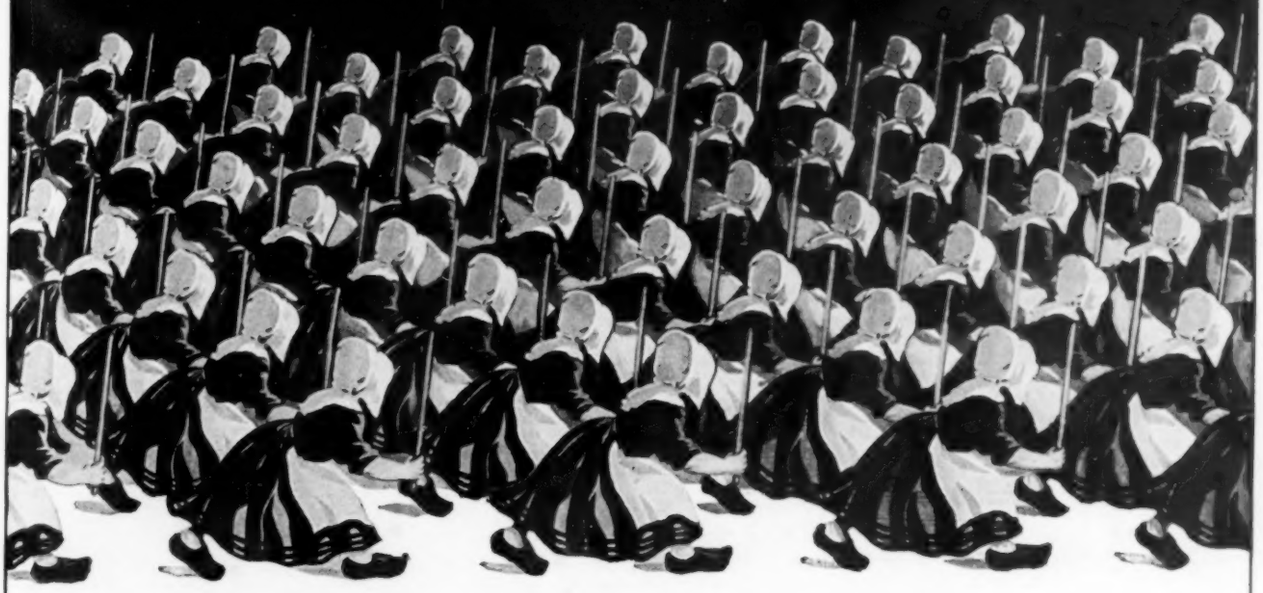
Answer.—It is usual in the case of cretinism for the victim to have to take thyroid for many years, sometimes throughout life. The deficiency of thyroid secretion, which is the cause of this condition, continues indefinitely and it is rare that the thyroid gland of the patient develops in such a way as to supply the necessary secretions and to make it possible to give up the use of thyroid altogether. However, there might be exceptions to this. Only a competent physician in charge of the case is in a position to judge of the matter.

There is no possible way in which chiropractic would be of benefit to the child; it might do serious harm.

The description of the child's habits makes it seem probable that cretinism is present in his case. A case of this sort should be under the care of a competent physician who should see the patient from time to time and prescribe definitely the treatment to be given.

A helpful article on the habit of bedwetting appeared in HYGEIA in April, 1928.

Old Dutch Cleanser brings
Healthful Cleanliness - the greatest
advance in modern cleaning efficiency



The Great Modern Advance

Old Dutch Brings Healthful Cleanliness, so essential to the well-being of your family. This notable Old Dutch achievement is the greatest advance in modern cleaning efficiency.

There is nothing like Old Dutch. It contains no harsh, scratchy grit, acid or caustic — it is not a chemical. Its marvelous efficiency is derived from "Seismotite" — a natural cleanser endowed with scientific cleaning principles. The flaky, flat-shaped particles of Old Dutch possess distinctive, detergent energy. They capture and remove the invisible impurities as well as the visible dirt; assuring wholesome, hygienic cleanliness.

Old Dutch preserves the modern beauty of the home. It is perfect for sinks and bath tubs of snow-white or gayly colored porcelain or enamel; painted walls or woodwork; pots, pans and cooking utensils of all kinds. Tile; floors; nickelplate; windows and mirrors; refrigerators; enameled or painted furniture, etc. The fact that Old Dutch does not harm the hands is convincing proof of its purity and safety.

Old Dutch Cleanser Homes are Healthful Homes

Clapp's
ORIGINAL APPROVED
BABY SOUP
AND
STRAINED
VEGETABLES

The Badge of Health Foods
In Glass Jars

For Infant Feeding
TO SUPPLEMENT THE MILK DIET
Prescribed by over 5,000 Specialists—

Because they are scientifically prepared under surgical standards of cleanliness and supply the elements needed for sound growth.

Because they cost less than if made at home and save a Mother at least 24 hours a week kitchen time and give her these extra hours to be out of doors with baby.

Because they are easily carried, keep indefinitely when sealed, are ready to use except for diluting and heating and so are equally convenient for feedings at home or traveling.

Clapp's Baby Soup. An appetizing combination of Beef Juice, Vegetables and Cereals.

Clapp's Wheatheart Soup, a combination of Vegetables, Cereals, and the Wheat Germ which supplies Food Iron and VITAMINE D abundantly.

Clapp's Strained Vegetables
Spinach, Carrots, Asparagus, String Beans, Peas, Beets, Tomatoes, Prunes and Apricots.

Are all scientifically prepared from carefully selected materials, especially for growing babies and are immensely liked by them.

These are simply wholesome, healthful foods, packed for convenience and economy in 4 oz. glass jars—Soups, also in 14 oz. jars.

Ask Your Doctor
and write us for your Dealer's name
HAROLD H. CLAPP, Inc.
1340 University Ave., Rochester, N. Y.

Books on Nervous Disorders

To the Editor:—I should like to find an authoritative book on nervous disorders, presented from the standpoint of psychologic origin. For example, certain types of nervousness and of fear apparently have a psychologic background and are the result of the early formation of a mental image which, although forgotten itself, yet remains the unconscious stimulus of the recurrent fear or nervousness under certain conditions. William Ellery Leonard, University of Wisconsin professor, has written a book, "The Engine Demon," which portrays an unusually developed case of this kind. However, this book treats only with the personal experience of fear, with no attempt at analysis or scientific treatment.

R. M. W., Wisconsin.

Answer.—The questioner should realize that phobias can seldom be cured by the patient's reading or studying himself.

Price of Cod Liver Oil

To the Editor:—I am interested in knowing the value per cost of the various cod liver oils. Why is there such a difference in prices? Does it depend on vitamin units?

K. S., Hawaii.

Answer.—It has been shown that the vitamin potency of cod liver oil may vary widely. While the U. S. Pharmacopeia permits the designation biologically standardized for cod liver oil containing as little as 50 units of vitamin A per Gm., to be acceptable for New and Nonofficial Remedies, it must contain at least 400 units per Gm. In addition, all cod liver oils now in New and Nonofficial Remedies have been tested for antirachitic (vitamin D) potency.

Such specially tested products sell at a somewhat higher price because of the more rigid control made necessary to insure compliance with the higher standards. Thus a leading manufacturer whose vitamin tested cod liver oil is admitted to New and Nonofficial Remedies charges $10 per dozen pints for the product, and in the same catalog lists an "Improved Lofoten" and a "Norwegian" cod liver oil at $8.40 per dozen pints. Examination of a number of price lists shows that oils which have not been admitted to New and Nonofficial Remedies and which do not specify the high standards required for such admission sell for little less than products that have been admitted. A recent issue of *Drug Markets* gives the current price of Norwegian cod liver oil as from $41 to $43 per 30 gallon barrel.

Are You Interested
in a
SAFE* and *SANE
PHYSICAL EDUCATION PROGRAM?

We advocate not "Fads and Fancies" but a practical scientific and educational program.

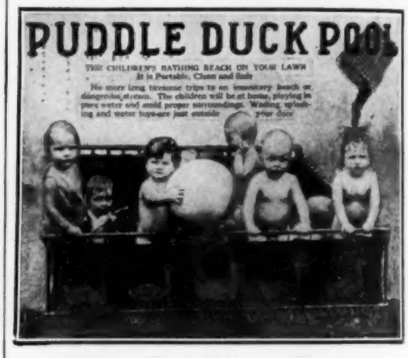
Why not join this Association and thus increase the possibilities for good work in physical education?

REGULAR MEMBER, $5.00
SUSTAINING MEMBER, $10.00

These memberships include the receipt of the AMERICAN PHYSICAL EDUCATION REVIEW, the only official magazine on physical education published in the United States.

Write for sample copy of the Review, application blanks and information to

AMERICAN PHYSICAL EDUCATION ASSOCIATION
Box G, Highland Station
SPRINGFIELD, MASSACHUSETTS



"The Bathing Beach on Your Lawn"

A portable canvas pool with water spray and depth regulator—water supplied and drained through a garden hose. We will be glad to send particulars.

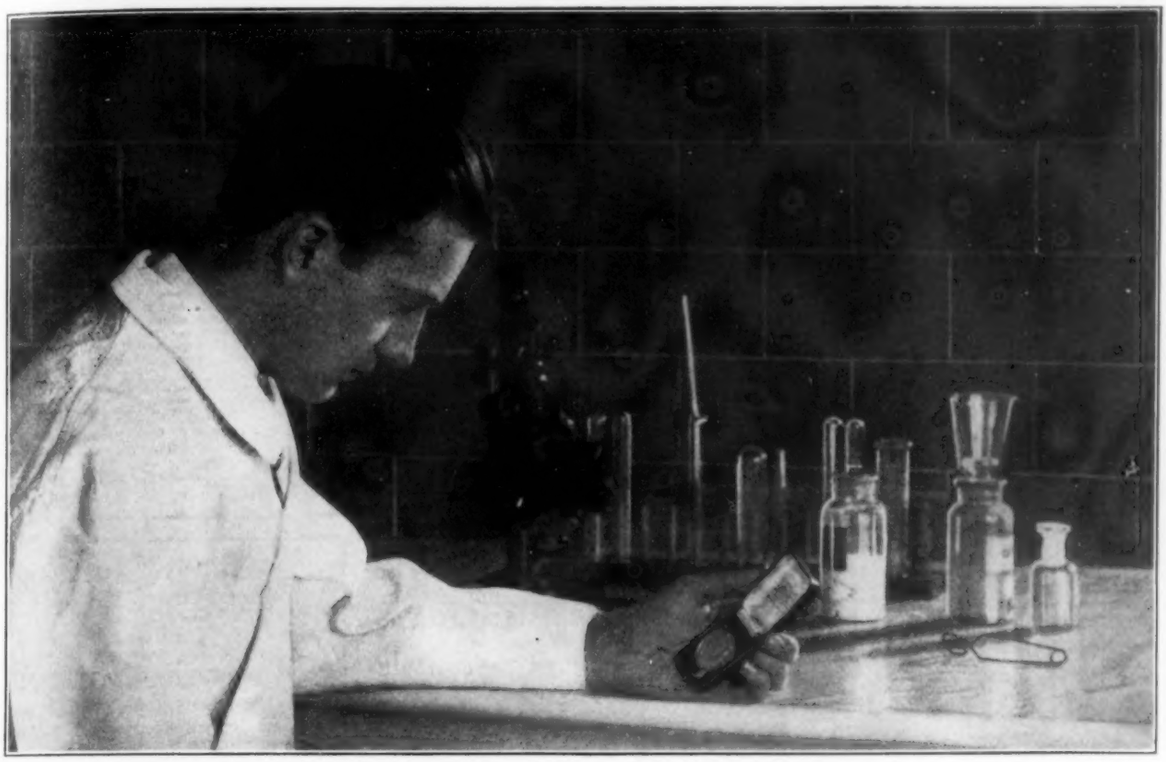
The American Wading Pool Co.
801 Wabash Bldg. Pittsburgh, Pa.

SUN-RAYED
PURE
TOMATO JUICE
Nature's Great Health Drink

Everywhere physicians and dietitians are recommending tomato juice as a valuable health drink. For years it has been prescribed for infants and growing children. Now its important Vitamins, delicious flavor and thirst quenching quality are being enjoyed by adults in increasing thousands.

Four years ago we began work in our laboratory to bring to you a tomato juice which would retain the rich, full red color, the flavor and health-giving values of fresh tomatoes. We have succeeded. "SUN-RAYED" Tomato Juice is the pure UNCOOKED juice of selected Indiana Tomatoes—sun ripened on the vines. Prepared by our EXCLUSIVE process which gives you full benefit of health-giving Vitamins A, B and C, the body-building minerals and essential fruit acids. Supplied in convenient 4 oz. bottles.

Tomato Juice is often recommended as a part of the diet in weight reduction and as a general conditioner. Write for Bulletin H-59. We will mail you a 4 oz. bottle for 15c or 10 4 oz. bottles for $1.50 post paid. THE SUN-RAYED COMPANY, Frankfort, Ind.



Winner of the Research Award

Back again in his laboratory Dr. Templeton sits and looks at the medal he received the night before "for distinguished medical research." Yes. He supposed his discovery would do much for mankind some day. But people are so slow to take advantage of the discoveries of science.

Roentgen, for example, discovered x-rays in 1895. The medical profession recognized the many inherent possibilities of these new rays which "see through," so to speak, the human body. As a diagnostic aid x-rays gained wide acceptance but their general use awaited the development of simple, reliable equipment for their generation which doctors could afford to buy. When Roentgen died twenty-eight years after his discovery x-rays were in general but by no means complete use.

Today, after thirty-four years, people are beginning to realize the enormous importance of the x-ray examination. The x-ray with the usual physical examination will tell you candidly and scientifically whether or not your condition should be a source of worry.

But, even more important is the protection afforded by the x-ray examination. Many diseases are relatively easy to deal with *if discovered early enough*. X-rays in many cases can locate disease before it can be detected any other way. The benefits of Roentgen's work are now being realized.

EASTMAN KODAK COMPANY, 343 STATE STREET,
Rochester, N. Y.
Gentlemen:

Please send me "How X-rays Aid the Public."

Name.....

Address .....

For those who "should eat bran"

This new, delicious Pettijohn's contains but conceals the roughage you need

DULL headaches, irritability, intestinal auto intoxication. Are you one of the army who suffer from "the great, unnecessary handicap"?

Perhaps you've believed, as so many have, that bran, to be effective, must be crude. The bran of New Pettijohn's is *doubly* efficient because it is *not separated* from the rest of the wheat berry. For with it you get the vital part of the wheat which always increases the effectiveness of bran. You get deliciously softened bran with no sharp edges to irritate the tender-

est digestive tract. You get *whole* bran in *whole* wheat, just as nature intended you to have it.

Since Pettijohn's is the whole grain, you have, too, the vitamins "A," "B" and "E" to protect health. Rich, whole wheat proteins to build muscle and tissues. And the precious minerals, iron, lime and phosphorus.

And this is but half of the story. More important than all is the fact that Pettijohn's is so temptingly delicious that people everywhere love to eat it.

Here's the health breakfast for you, then. A steaming, flavory, dish of golden whole wheat flakes. And Pettijohn's is made to cook in "toast and coffee time."

Buy a box of Pettijohn's today for breakfast tomorrow. Prove to yourself how appetizing bran can be, if it's served as nature made it, whole bran in whole wheat.

Pettijohn's

For those who believe in "whole grain nutrition"

There are many new Pettijohn recipes, waiting for you at the Quaker Oats Company in a booklet called "The Truth About Bran." Address The Quaker Oats Company, Chicago, for your free copy.

MAKING THE GOLD COAST SAFE FOR WHITE MEN

Time was when the Gold Coast of West Africa was called "the white man's grave." There was no proper water supply or drainage and the mosquitoes bred in myriads. Food was atrocious. The European had to rely on fish for his fresh food, as there were no cattle or sheep. There was little or nothing in the way of recreation.

Thirty years ago the total strength of the medical staff on the Gold Coast was fourteen. There were no nurses. The native hospitals were mere shacks and the equipment was scanty. Under such conditions it is not surprising that the invaliding rate for officials in 1897 was 137.5 per thousand; for nonofficials, 129.83. The death rate was 37.5 for officials and 99.92 for nonofficials.

Extensive changes are described by the director of medical services of the Gold Coast in a report to the London *Times*, quoted in *The Journal* of the American Medical Association.

Sanitary measures have diminished the incidence of malaria, dysentery and worm infestations. Tsetse fly areas are being cleared. Beriberi has almost vanished and yaws is becoming rare with the application of the newest and best remedies.

Today eighty-nine European medical officers, seven women physicians and four native African medical officers are working this area. There is a staff of twenty-six European nursing sisters. Forty-one African hospitals and thirty-eight dispensaries have a total of more than 1,000 beds.

Owing to the opening up of the country by railways and roads there is almost everywhere an ample fresh meat supply. Ice and cold storage plants in Accra and Sekondi insure a variety of fresh food not only to those two towns but to all stations on the railway system and to the coast towns. The Europeans now live in comfortable concrete houses and many European women have come to live.

As a result of the great improvement in living conditions, an improvement has taken place in the death rate. For the year ending April 30, 1928, the invaliding rates were 32.44 and 20.21 respectively and the death rates 4.99 and 8.84.

There is one point in which all men might be born free and equal. That is in regard to health. If a child has clean blood, a good brain, and a mother who knows how to care for herself and for him, he is equal to any other child on the face of the earth.—*Roosevelt.*

For those wayward thumbs

This soft, pliable, kindly little binder, fastened gently to baby's active chubby arms, does **just what it is intended to do and no more**—keeps the thumb or finger from quite reaching the mouth, and does not hamper movements or play in any other direction. Children become immediately accustomed to it and it is a wholesome way to ward off the whole train of baby ills—facial deformities, respiratory and throat troubles—that come with the thumb-sucking habit. Help your baby—try a

BOWERS KANT-FAYL ANTI-FINGER SUCKING DEVICE

If your dealer cannot supply you, order from us. Per set, $3.00

Little Rock Surgical Company
Donahey Bldg. LITTLE ROCK, ARK.

CAMP
TRADE MARK

Maternity Supports

Scientifically designed in types of models for all figures, gives low abdominal uplift with no constriction.

Special feature—Original patented adjustment supplying sacro-iliac support and easy regulation to size and pressure as required.

Wonderful reaction to normal health, and mental and physical buoyancy.

Write for special information.

S. H. Camp & Co.
Jackson, Mich.
Mfgs.

Fisher & Burpe, Ltd., Manufacturers for Canada
Winnipeg, Manitoba

DERBAC

A Unique Health Shampoo

Especially for Children!

A delightful shampoo that benefits the hair and scalp. It positively prevents and will quickly cure infestations to which all school children are exposed. Recommended by Boards of Health and of Education, and by teachers, nurses, and doctors all over the United States.

Our interesting health film is available free for schools and club meetings. The picture shown is taken from this film.

We will ask your druggist to carry Derbac if you send us his name and address. Send 25c for a 20-shampoo cake.

CEREAL SOAPS CO., INC.
Dept. H-5, 334 E. 27th St., N.Y.C.

Make Money in Spare Time

Representatives for Hygeia are wanted in every community. Generous commission. Send for full details.

CULTISTS SEEK EQUALITY WITH PHYSICIANS

Should a state recognize learning? Should it grant equal authority to the mechanic and the engineer, the barber and the surgeon?

The Philadelphia *Record* asked these questions in a recent editorial when a bill was before its legislature to give chiropractors a chiropractic examining board. If such a law were enacted all the cults could claim similar recognition.

These cults that demand equal recognition with the physician are described by the *Record* as uneducated faddists who play with half-truths. Their "schools" require courses of from six weeks to six months without any preliminary education. They call themselves by such names as neuropaths, naturopaths, naprapaths, sanipractors, vitapaths, heliopaths, thermopaths and spiritualists.

The medical profession requires a four-year college course before the student enters medical school for four years' intensive study of medicine. This is followed by one or two years' internship. It is about ten years from the time a boy leaves high school before he is ready to practice medicine or surgery, the editorial points out.

The general health of the community has been improved, the span of life lengthened, the ravages of epidemics checked through the advances of medical science. Therefore it is to the interest of a community to protect this profession against intrusion of half-baked theorists and faddists, the *Record* insists. To allow the enactment of a law giving cults equal rights with qualified, educated physicians would be a step backward, a sign of retrogression in civilization.

HUMAN FACTOR MAKES MACHINES DANGEROUS

Manufacturers take every precaution to make their products foolproof, but the human factor connected with their operation is frequently faulty and too often fatally so, observes the *Ohio Health News*. Deaths from carbon monoxide offer striking proof.

Automobile exhaust fumes and the fumes from gas heaters are the most prolific causes of these unnecessary fatalities. Gas heaters need sufficient air for combustion and a sealed tight room does not have enough in it. Leaky gas pipes and worn-out valves are the chief factors in the production of carbon monoxide in homes. The exhaust from the automobile is deadly in a closed car or a closed garage.

SCENE IN KABELVAAG, LOFODEN ISLANDS, NORWAY WHERE ONE OF NASON'S PLANTS IS LOCATED

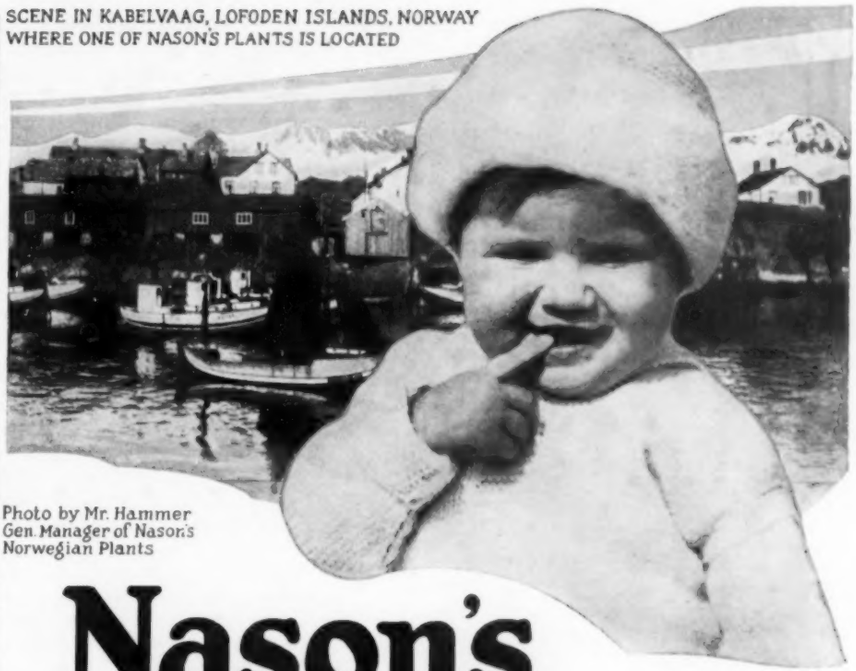


Photo by Mr. Hammer
Gen. Manager of Nason's
Norwegian Plants

Nason's

-a Name that Protects Quality from Arctic Fishing Grounds to the American Home - - -

The protection of quality begins at the fishing grounds where the Cod are caught in freezing temperature and the oil immediately extracted from the fresh livers at Nason's own plants on the nearby shore.

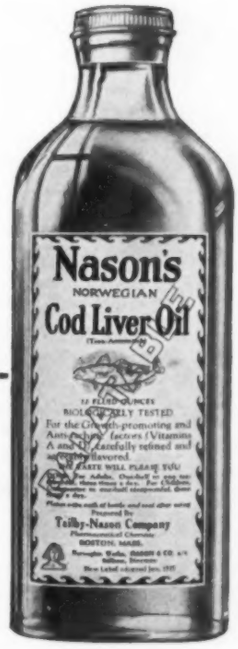
Every process of extracting and refining is handled within the Nason organization in Norway, and the biological testing of each lot, the bottling and shipping is done by the Tailby-Nason Company in America.

Vitamin Potency Warranted

Nason's palatable cod liver oil is required to have a content of fat soluble vitamin A, determined by the U. S. P. method, of not less than 500 units per gram, and an anti-rachitic potency such that 0.02 Gm. per day will produce definite healing in the leg bones of rachitic rats.

A fractional percent of pleasant flavor added to the pure oil makes Nason's easy to take by both children and adults.

Nason's
Palatable -Norwegian
Cod Liver Oil
The Better Tasting Kind



TAILBY-NASON COMPANY, Kendall Square Station, Boston, Mass.
Pharmaceutical Manufacturers to the Professions of Medicine and Pharmacy since 1905.

Gentlemen:—You may send me (without charge) sample bottle of Nason's Palatable Cod Liver Oil.

Name.....

Address.....

My Druggist's Name..... H.5-29

are enabled by the Mitchell Table to **sit upright.** Harmful humping eliminated.

especially appreciate the Mitchell Table. Permits them to read without eye-strain—to eat comfortably.

now read, write and edit in their coziest chair.

A Dozen Uses in Every Home

Ease and Relaxation Never Felt Before

DO YOU like to read? Then here is a new convenience—a new delight! The Mitchell Table holds your book or magazine in exactly the right position for comfort. Arm-strain, muscle-strain, eye-strain are all removed. Now you can read **for hours** with perfect comfort and relaxation. A lifelong investment in **health** worth many times its original cost.

Dozens of Uses

Here at last is a means of reading and breakfasting **comfortably** in bed. Children, using the Mitchell Table in their studies, sit upright and breathe properly. Humping, with its **harmful effect on lungs, heart, liver and stomach,** is eliminated.

An ever-appreciated ray of sunshine in the lives of invalids—a portable "desk" that allows you to write, sketch or draw comfortably in bed or in your coziest chair. A distinctive gift that never fails to arouse enthusiasm.

Made to last a lifetime—the Mitchell Table is the **simplest** and **handsomest** made. Two easily adjusted thumb nuts control all positions of the panel. Attractively finished in mahogany or walnut. Artistic design on panel lends grace and richness. Folds flat when not in use. **Metal supports for bed use and book clips included without extra charge.**

Five Days' Trial—No Money Down! Send us the coupon below and we will gladly mail you a Mitchell Table postpaid. Use it in your own home; see for yourself its advantages. Keep it only if absolutely satisfied. $6.50 is a small price for lifelong reading comfort, isn't it? Send in coupon today.

MITCHELL MOULDING CO.
Dept. 905, Forest Park, Ill.

You may send me, postpaid, a Mitchell Lap Table in ☐ Mahogany Finish ☐ Walnut Finish on trial. Five days after receiving it, I will either return it or send you $6.50.

Name.....

Street Address.....

City..... State.....

Canada: National Traders' Corp., Montreal

Folds flat when not in use

IF YOU CANNOT SLEEP

Insomnia is one of the commonest complaints of mankind. It is usually caused by poor personal hygiene, such as irregular hours for meals and sleep, heavy meals just before retiring, too much tobacco or worry, lack of proper exercise in the open air, lack of proper ventilation during working hours and sometimes overwork in mental endeavors.

A few suggestions for overcoming sleeplessness are listed in the bulletin of the Oklahoma department of health:

1. Regulate your diet and eat only well balanced meals, making the evening meal especially light.

2. Direct your mind from the work of the day by reading light literature or playing some interesting game that requires little concentration.

3. Take a brisk walk in the open air an hour or so before retiring and just before going to bed take a cup of hot cocoa or milk with a couple of crackers.

4. Be sure your sleeping room is well ventilated. Have sufficient bed covering to keep warm, but not too heavy or too much.

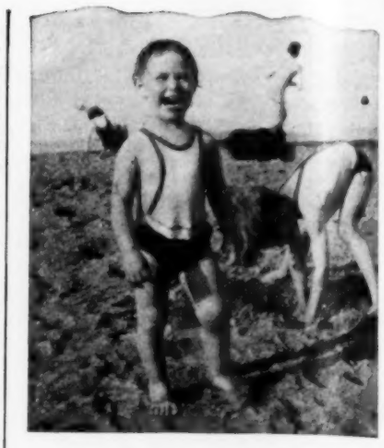
U. S. NEEDS FULL TIME HEALTH OFFICERS

One of the next big steps in public health work in the United States is the employment of full time health officers who have had special training for their work, George J. Nelbach of the New York State Charities Aid Association declared in a recent radio address.

Health officers are usually physicians engaged in private practice and the work of a busy physician leaves little time and strength for the proper performance of public duties. "In England 350 of her 1233 health officers, almost 30 per cent, are employed on a full time basis, but it is doubtful whether here in our country we have as much as 1 per cent," Mr. Nelbach said.

"There is so much that needs to be done that the system of having a part time man has been outgrown. We need full time health officers just as we found out thirty or forty years ago that we had to have full time school superintendents," he concluded.

Health should mean more than freedom from disease. It should be a positive, compelling force, radiating enthusiasm in which the individual is at his maximum efficiency, in harmony with both mental and physical environment.
—*Dr. A. S. Lamb*, McGill University.



Don't Rob Your Baby of Sunshine

Babies' bodies need sunshine. Kept away from the sun babies grow pale and sickly, like flowers that do not get the light. The sun's rays cure and prevent many babies' diseases, build strong bones and healthy, sturdy bodies. Doctors say give your baby sun baths every day.

Vanta
Original
SUN SUIT

lets the healing rays of the sun reach little arms, legs, shoulders, chest and particularly back and spine, but protects vital parts.

Vanta Sun Shirt to match Sun Suits easily pulls on over head to protect against cool breezes. *Vanta Sun Tam* protects the head.

Vanta Sun Garments, cotton for play and wool (suitable to wear in water) are Vanta Quality, in six brilliant California colors; sizes to 12 years. A doctor's prescription in each Sun Suit tells how to give your baby sun baths.

Vanta Linen Mesh Garments

Physicians suggested Vanta Linen Mesh Garments for babies, so we make them in Shirts, Vests and Union Suits. They absorb perspiration readily, eliminating one cause for colds, easily washed and durable. Of pure imported Irish linen with a mixture of fine lisle thread producing a soft fabric just right for babies at reasonable prices.

FREE TO YOU

Vanta Pattern, also "Baby's Outfit," a book of 64 pages on care and dressing of babies.

Earnshaw Sales Co., Inc.,
Dept. 1202, Newton, Mass.

Send free pattern and full instructions for making the new Vanta square-fold, pinless diaper. Also Baby's Outfit book and illustrated catalog, all in plain envelope.

Name.....

Address.....

City..... State.....

CARING FOR THE CHILD'S FIRST TEETH

Why are children's first teeth important? Because a child needs them to chew his food during the greater part of the most rapid growth period of his life. Because all the deciduous teeth are in use for six years and part of them as long as ten years of the child's life.

What may be done to keep the deciduous teeth? See that the child has plenty of the kinds of foods that furnish mineral salts and vitamins. Give the child foods that are cleansing to the teeth. Teach the child how to masticate food thoroughly. Keep the mouth clean. Have the teeth examined and treated at least twice a year. See that the child has plenty of rest and sleep, fresh air and happy play.

What kind of toothbrush should be used? A tiny, single row toothbrush for the baby. For the 2 year old child, a small brush. The brush head should never be longer than 1¼ inches. The tufts of bristles should be set far apart and the bristles should be of medium stiffness.

What dentifrice should be used with the brush? Normal salt solution—half a level teaspoonful of salt to a glass of cool boiled water. After the age of 2 if desired an unmedicated toothpaste may be used.

How soon may a toothbrush be used? As soon as the first eight teeth are fully erupted, a very tiny, soft bristle brush may be used in combination with the gauze or cotton which the mother uses to cleanse the baby's mouth.

—*American Dental Association.*

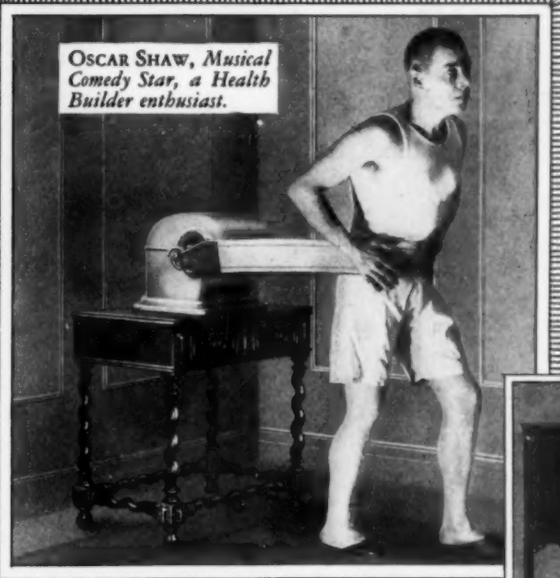
BUSINESS FIRM ISSUES HEALTH MATERIAL

The school child, the girl who works all day and plays most of the night and the man who gets too little rest and outdoor exercise are the persons who most frequently develop tuberculosis.

The story of these three types of persons is told briefly and pointedly in a leaflet issued by the John Hancock Mutual Life Insurance Company, Boston, Mass., as its contribution to the 1929 Early Diagnosis Campaign conducted by the National Tuberculosis Association. The leaflet is entitled "Three Portraits, Is One Yours?" and the basis of its message is that early diagnosis may mean early cure. It may be obtained free.

"That Mean Cold" is the title of another new publication of the same insurance company. It tells in eight snappily illustrated pages how one gets a cold, what to do for it and how to avoid others.

KEEP FIT in 15 minutes a day



OSCAR SHAW, *Musical Comedy Star, a Health Builder enthusiast.*

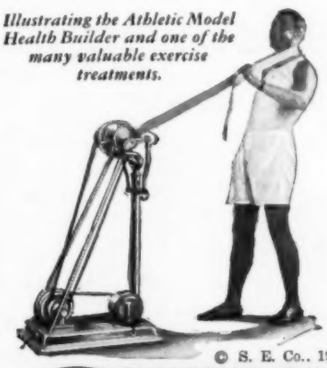
DOROTHY KNAPP, *world-famous beauty, says, "I unhesitatingly recommend the Health Builder to everyone interested in keeping radiantly healthy".*

NEVER before has health been so important an asset for business and social success as it is today. Never before has the pressure of modern living put such a strain on physical condition. You simply *must* KEEP FIT—without waste of time or effort.

Oscillate Your Way to Health

There is only *one* way to keep fit—DAILY physical exercise. Science now makes this possible, and in a most enjoyable, simple new way. Just 15 minutes a day of invigorating massage and vibratory-exercise with the famous Battle Creek Health Builder, manufactured under the patents of Dr. John Harvey Kellogg, awakens each tiny capillary into new activity, stimulates the perspiratory and sebaceous glands, vigorously massages the heaviest muscles, helps eliminate dangerous body poisons, and aids in general reduction of body weight.

Illustrating the Athletic Model Health Builder and one of the many valuable exercise treatments.



© S. E. Co., 1929

The Result of Years of Development

No other appliance can produce the same effects as the Health Builder. Improved year by year, as a result of long study and research by an eminent physician, the action of the Health Builder is perfectly synchronized with human muscle tone.

A Health Builder for Every Requirement

Ideal for home use is the Universal Home Model, a compact, enclosed Health Builder. The Athletic Model is very popular for clubs, home gymnasiums, colleges, health centers, institutions, steamships, etc., while the handsome De Luxe Cabinet Models combine utility with distinctive beauty.

Health Facts for You—FREE!

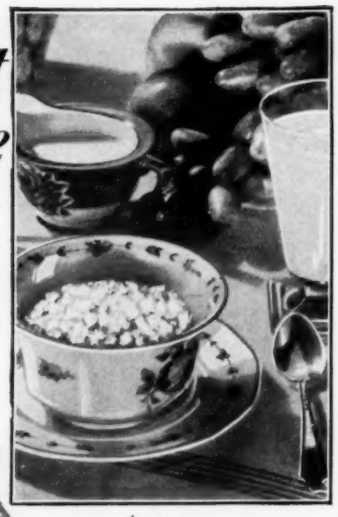
Send at once for "Keeping Fit in Fifteen Minutes a Day"—a valuable FREE book showing how the Health Builder keeps you fit. Health should come *first!* Write for your copy—NOW!

Sanitarium Equipment Co.
Room AO-1857 Battle Creek, Mich.

Choice of 80,000 Because Medically Correct

The Battle Creek Health Builder Keeps You Fit!

Every child *must be given the chance to grow strong . .*



YOUR CHILD can have sturdy, straight legs, good white teeth, rosy cheeks and sparkling eyes. But only the right kind of food can give them to him.

At Battle Creek, food specialists have spent years studying child feeding. As a result they have made nourishment more easily and appetizingly available. Food-lime for strong bones and good teeth, food-iron for red blood and Vitamin B for vigorous growth are offered in the most delicious cereals, food drinks, and wafers.

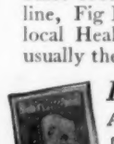
Fig Bran is a delicious breakfast food rich in the three great food elements every growing child must have. Featured this month at all Health Food Centers.

Especially popular is Fig Bran. Children and adults as well, love its flavor of parched bran and luscious California figs. This tempting cereal is so high in food value that it helps to make up the deficiencies of the modern diet. In a healthful, natural manner it aids in regulating body functions, and it makes it easier to keep fit. Pale children and invalids need the nourishment of Fig Bran. It is ready to serve anytime.

At the famous Battle Creek Sanitarium and similar institutions all over the world, Fig Bran is served daily. Together with the other foods in the Battle Creek line, Fig Bran is sold by your local Health Food Center—usually the leading grocer.

SAVITA—Yeast extract rivaling finest meat flavor. PROTOSE—Vegetable meat rich as choicest beef. MALTED NUTS—Delicious food drink teeming with health. FIG BRAN—A dainty cereal of bran and luscious figs. "ZO"—Toothsome vitamin cereal everyone enjoys. VITA WHEAT—Appetizing all-wheat 6 minute porridge. BRAN BISCUIT—Crisp, tasty, wholesome bran crackers.

BATTLE CREEK SANITARIUM HEALTH FOODS *for Everybody*



Free Diet Service

At Battle Creek we maintain a staff of graduate dietitians to advise you on any diet problem. If you will write to Ida Jean Kain, our chief dietitian, she will send you suggestions for your particular diet. "Healthful Living," a most interesting and helpful book, written by a leading nutrition expert, will be sent free if you write your name and address on the margin of this ad and send it to us. It describes with recipes many of the foods used in the Battle Creek Diet System. THE BATTLE CREEK FOOD CO., Dept. 95, Battle Creek, Mich.

ANALYSIS CHARTS MAKE HEALTH WEEK PERSONAL

An original slant was given to the annual observance of health week by the Western Electric Company. A set of five individual analysis charts was distributed to all employees. These charts served as the basis for lively conferences during the week and enabled each person to analyze his individual needs. The first chart presented the following subjects for thought:

1. What is my health worth to me?
2. What would added years of earning power be worth?
3. What could I do with greater vitality now?
4. What has sickness cost me in the last year?
5. On what date did I last have a complete physical examination?
6. What advice did I receive?
7. How have I carried out this advice?
8. What improvement in my health have I noted?
9. When do I intend to have my next complete physical examination?
10. On what date did I last have a complete dental examination?
11. How have I carried out the advice given?
12. When do I intend to have my next dental examination?
13. On what date did I last have a complete eye examination?
14. Do I need glasses?
15. If I wear glasses, are they satisfactory?
16. When do I intend to have my next eye examination?
17. In what respect can my health be improved?

"MINISTER FOR MILK" FIGHTS FOR BETTER NUTRITION

"Minister for milk" is the nickname that has been attached to the minister for health in the state of New South Wales, Australia, because of his earnest and persistent campaign for an increased consumption of milk, says *The Journal* of the American Medical Association. This physician is especially concerned with the deplorable condition of the teeth of children in New South Wales and hopes to encourage the growth of better teeth in the next generation. He is arranging to have fresh milk sold in the schools and his aim is to have every one in the state enjoy the daily pint of milk.

Chew your food well; your stomach has no teeth.—*American Dental Association.*

STOP
Thumb-Sucking
JUBILEE
BABY ARMLET
Aluminum—Adjustable
$1.00 Pair
Also corrects Nail-Biting
A safe, easy, kindly way. Invaluable if suffering from Eczema or other skin disease. Allows free movement, even considerable bending of elbow. Loose fitting, light, sanitary, cool. Snap fasteners, adjust to 5 different sizes. Handy. At drug or surgical supply houses, or postpaid on receipt of $1. If more convenient, order C.O.D. and pay postman $1.10 on delivery.
JUBILEE MFG. CO., 21 Sta. C., Omaha, Neb.

Entertaining
The Convalescent Child
If children in your family are recuperating from the spring contagious diseases—measles, chicken pox, mumps—and are restless at being confined to bed, you will value this illustrated booklet with its suggestions for quiet amusements. Ideas for inexpensive games, cut-outs, home-made toys, etc. From prize letters in HYGEIA.
10c a copy
AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago

Representatives Wanted—*Write Hygeia*

STEP by STEP *with Baby...!*

WITH pride and joy this climbing toddler called back to her mother as she started towards the bathroom, a few weeks after she had received her "Toidey" Steps, "'Toidey' mother! But *you* don't need to come. *You don't need to come!*"

That was a great day for this child. She felt the full zest of achievement. It was a great day, too, somewhat earlier when she found herself able to climb alone to her familiar "Toidey".

It is a great day for the infant when he first presses his little feet against the footboard of the Foot Pressure Rest Toidey, and grasps with his tiny fingers the Toidey's comfortable supporting arms. Secure, and conscious of it, safe and comfortable, he is happy and at peace —in just the mood for proper functioning.

"Toideys", always useful at home, go, too, where baby goes. Fold compactly; will fit any toilet.

At all Leading Stores

Toideys, - - - $3 - $5
Toidey Steps, - - - $6

Write for details and booklet, "How to train and keep baby regular."

Ask also about "Comfy-Safe" AutoSeat (Not a toilet).

Juvenile Wood Products, *Inc.*

Gertrude A. Muller, Pres.

Box M FORT WAYNE, INDIANA

A Company devoted to the scientific study and production of helps for baby.

RURAL SAFETY MATERIAL IS NOW AVAILABLE

Accidents in the country are somewhat different from those that occur in the city, but they are sufficiently numerous that 40,000 persons succumb to them every year.

Safety material prepared for teachers has hitherto been based principally on accidents that occur in cities, but now for the first time suitable material for country schools has been analyzed and made available by the education division of the National Safety Council.

Home and farm accidents are far more numerous than public accidents, a survey made in Iowa, New Jersey and Connecticut shows. Falls, burns and scalds and cuts head the list. "Safety Education in the Rural Schools" gives simple and specific suggestions for the avoidance of these accidents. For example, "a step ladder should have all four feet on the floor and the braces set. Avoid climbing on a ladder that leans against a pile of hay or straw unless some one is holding the ladder at the bottom. New straw and hay are so slippery that the ladder may not remain in position unless it is held."

The National Safety Council also announces that summer courses for teachers of safety education will be given during the coming summer at Teachers College, Columbia University and at George Peabody College for Teachers, Nashville, Tenn. The course will include methods of teaching safety, causes of accidents, psychology of learning in this field, correlation of safety with regular school subjects and the study of instructional materials.

SWARMS OF GNATS CAUSE EYE TROUBLES

A plague of insects is causing serious eye trouble in certain districts of California. The California eye gnat swarms about the eyes, noses and mouths of persons and stock and causes serious conjunctivitis or pink eye. Fifteen hundred children in the Coachella Valley schools are said to be suffering from this complaint and many of them have contracted chronic trachoma as a result of the insect's ravages, according to a statement from local officials who appeared before a committee of Congress to ask for aid from the Bureau of Entomology in destroying the pest. One theory for the presence of the troublesome gnat in California is that they came from some foreign country with the importation of date palms.

Wet Feet

Spring is here with puddles and wet feet—then most likely a slight temperature and sickness usually follows.

BUY YOUR CHILDREN

The Busy-Kiddie
TRADE MARK

and they will have such a glorious time staying at home that their feet won't have a chance to get wet.

The "BUSY-KIDDIE" is a children's gym outfit to be hung up in any ordinary doorway and it includes the Patented Hanger, flying rings, trapeze and a swing, so boys can build brawn and muscle, while little girls may swing to their hearts' content.

$7.75 PER SET

Patented
The Hanger

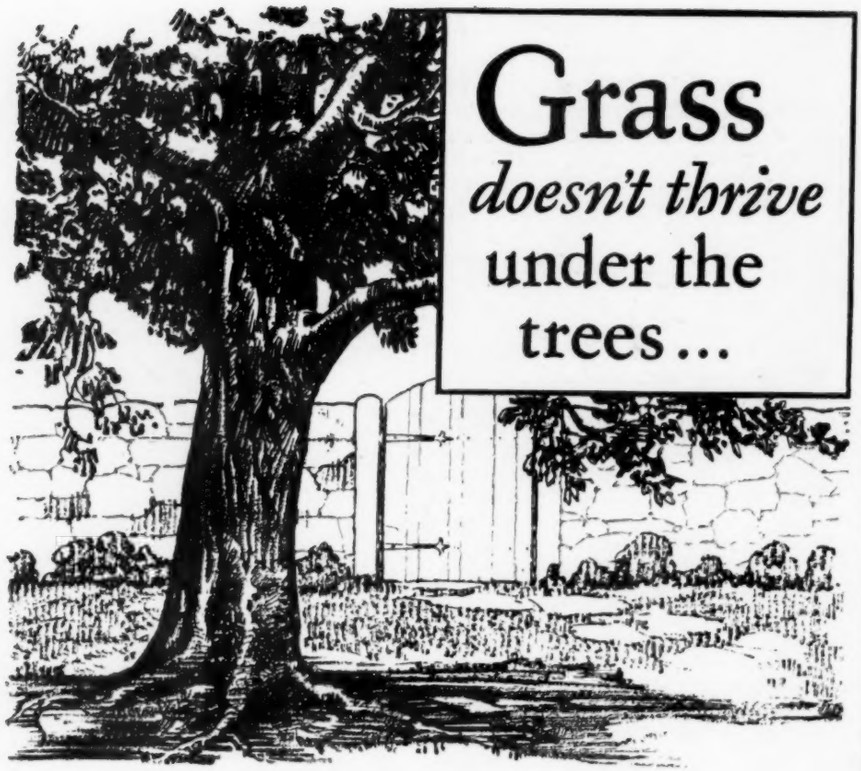
Swing, trapeze and flying rings are all hung from this one patented HANGER, which can be fastened in place or released by the turn of a thumb screw. Won't mar wood work. Tested to 350 lbs.

See Hanger Overhead

A "BUSY-KIDDIE" Set —hanger, swing, trapeze and rings, complete —costs $7.75. Ask your department store, toy store or sporting goods dealer for the "BUSY-KIDDIE" — the set with the HANGER. Also sold direct.

Write for Free Folder

STANDARD PRESSED STEEL CO.
JENKINTOWN, PA. • • BOX 504



. . . LIFE needs sunlight. Health demands it. Under modern conditions most of us get too little of it half the year; the vital ultra-violet rays of the sun are shut out by ordinary window glass.

Helioglass is a window glass which through special manufacturing processes has been made permeable to these health stimulating, body-building ultra-violet rays. These beneficial qualities together with the moderate price of Helioglass make it intensely practicable for general use.

In your new home or when making changes in your present one, use Helioglass at least in sunrooms and sun-exposed* bedrooms. You can scarcely make a better investment in health and the happiness that comes with health.

Your hardware dealer can readily secure Helioglass for you from one of our fifty-three warehouses.

PITTSBURGH PLATE GLASS CO. · PITTSBURGH, PA.

Warehouses in every principal city in the United States

HELIOGLASS
TRADE MARK REG. U.S. PAT. OFF.
AN ULTRA-VIOLET RAY GLASS

No substitute for sunshine costs so little and serves so well as this glass which lets in the real sunshine.

*The ultra-violet rays are not limited to direct sunlight and Helioglass may be used to advantage in all windows, but the benefits are naturally much greater where direct sunlight passes into the room through Helioglass.

If your architect does not have the facts about Helioglass, write to us.

LET PHYSICIAN DIRECT LIGHT TREATMENT

Since medical science has demonstrated the value of light in the treatment of disease and the maintenance of health, many varieties of "health lamps" are offered for sale. Some produce rays approximating those of the sun; some have no more medical value than an ordinary electric light bulb. An article in nontechnical phraseology in *Popular Science Monthly* describes the principal types of lamps.

First the author emphasizes that no one should buy a lamp without consulting a physician. A lamp should never be used to treat a sick person except under a physician's orders.

There are two principal types of lamps, the mercury vapor lamp and the carbon arc lamp. Mercury vapor lamps inclosed in quartz tubes produce ultraviolet rays, the invisible rays outside the violet end of the spectrum. These are the rays that cause the skin to tan. Most "health lamps" produce or claim to produce ultraviolet rays, but the mercury vapor lamps have a concentration of energy from the ultraviolet part of the spectrum, making it possible for a person to obtain in a short time the benefits of the rays artificially. But caution is necessary, the article warns. Exposure foolishly prolonged will produce severe burns.

The carbon arc lamp, on the other hand, endeavors to approximate natural sunshine. It contains ultraviolet rays in therapeutic quantities, the infra-red rays from the other end of the spectrum and rays from in between. With either type of lamp it is necessary to wear tinted goggles.

FASCISTS CONTROL SPORT, PHYSICAL EDUCATION

Physical education of all Italian children is under the control of the Fascist party through an official regulation published on December 29, 1928, according to Alexander Kirk in *School Life*. All children between the ages of 6 and 14 are required to take physical culture, but may not take part in athletic competition.

Boys and girls between 14 and 17 must have the prescribed physical education under the direction of an organization known as the Balilla, and in addition may enter athletic competition under the supervision of the Italian Olympic Committee. The regulation further states that all equipment of gymnasiums and clubs in Italy must be placed at the disposal of the Balilla whenever necessary.

HOLD SECOND PARENTS' EXPOSITION

To bring before parents and citizens of New York City the best and most scientific information covering all phases of home making and child training the second annual Parents' Exposition was held the last two weeks in February, by the United Parents' Associations of Greater New York Schools.

Home furnishing with special attention to arrangements for children; practical problems in clothing for children with advice about textiles; labor saving equipment for the home; problems of diet, food planning and sanitation were among the exhibits in the exposition. The products, services and agencies shown were chosen as among the best in their respective fields and as typical of the finest that can be found in America.

The health exhibits included a two-hour clinic for preschool children each afternoon during the exposition. Physical examinations were given to a certain number of children, nutrition instruction given and exercises for good posture were demonstrated. Other exhibits demonstrated health clinics for adults, methods of preventing disease, the importance of milk in children's diet, value of diet and dentist's care in building good teeth and modern high grade products for use in the nursery and home medicine chest.

WHAT IS FATIGUE?

Fatigue has been called the universal occupational disease. It is common to every occupation, including housekeeping, and it is even possible to be tired from loafing.

It is quite natural to feel tired after a hard day's work but we should not feel too tired to take an interest in some kind of healthful recreation during the evening. A night's rest should leave a person feeling fit each morning.

Here are some of the principal causes of fatigue:

1. Overwork.
2. Worry and hurry.
3. Insufficient rest and sleep.
4. Bad air.
5. Hunger.
6. Eyestrain.
7. Constipation and indigestion.
8. Insufficient outdoor exercise.
9. Onset of some infectious disease.

If fatigue is not plainly due to lack of rest or other obvious causes it is advisable to see the doctor. Perhaps only a simple adjustment in living habits may be necessary but a medical examination may prevent a severe illness.—*National Safety News.*

The function of a dentifrice is to *clean* the teeth. No dentifrice can cure pyorrhea; no dentifrice can correct an acid condition of the saliva.

Why Colgate's has become

AMERICA'S FAVORITE TOOTHPASTE

The amazing story of Penetrating Foam . . . that cleans where the toothbrush cannot reach

The reason why more people use Colgate's than any other toothpaste is simply that it cleans teeth better.

And by "clean" we mean not just the outer tooth surfaces but the tiny crevices where food particles lodge and where decay starts. No toothbrush can reach these hard-to-clean places. They must be cleansed by the dentifrice.

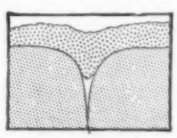
Hence the real test of your toothpaste is its ability to get down into these crevices and cleanse them thoroughly. A recent scientific test proved that Colgate's has a greater penetrating power than any of the leading toothpastes on the market today. This is the secret of Colgate's superior cleansing power.*

When brushed, Colgate's breaks into an active, sparkling foam. This foam possesses a remarkable property (low "surface-tension") which enables it to get deep down into every minute pit and fissure. There it softens and dislodges the impurities, sweeping them away in a detergent wave.

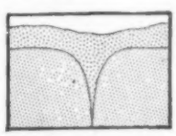
In this foam is carried a fine chalk powder, a polishing material prescribed by dentists, which polishes the enamel safely, brilliantly.

By using Colgate's you can clean your teeth thoroughly, scientifically, exactly as your dentist would have you clean them . . . restoring the natural loveliness of teeth and gums.

*How Colgate's Cleans Crevices Where Tooth Decay May Start



Greatly magnified picture of tiny tooth crevice. Note how ordinary, sluggish toothpaste (having high "surface-tension") fails to penetrate deep down where the causes of decay lurk.



This diagram shows how Colgate's active foam (having low "surface-tension") penetrates deep down into the crevice, cleansing it completely where the toothbrush cannot reach.

COLGATE, Dept. B-1799, 595 Fifth Avenue, New York, N. Y. Please send a free trial tube of Colgate's Ribbon Dental Cream, with booklet "How to Keep Teeth and Mouth Healthy." FREE

*Name*_____

*Address*_____

Armpits Dry and Odorless

No more perspiration ruined dresses!

NONSPI *(an antiseptic liquid)* will keep your armpits dry and odorless—save your lingerie, dresses and gowns from ruinous perspiration stains—and give you a feeling of comfort which you cannot enjoy if you are a victim of excessive armpit perspiration.

NONSPI, used and endorsed by physicians and nurses, does not stop perspiration. It destroys the perspiration odors and diverts this perspiration to parts of the body where there is better evaporation.

Wouldn't you like to be sure that you are free from armpit odors—that your clothing was protected from destructive perspiration stains? A few drops of NONSPI applied to the underarms on an average of twice a week will protect you and your clothing.

More than a million women keep their armpits dry and odorless by using NONSPI. It is a year around toilet requisite for fastidious women. They use NONSPI spring, summer, fall and winter.

A 50 cent bottle of NONSPI lasts several months. Get it from your department or drug store. If preferred, we will mail you a bottle postpaid for 50 cents (we accept postage stamps) or will mail a testing sample free.

THE NONSPI COMPANY
2673 Walnut Street,
Kansas City, Missouri

Send free NONSPI sample to

NAME.....

STREET.....

CITY.....

NONSPI

RURAL SECTIONS NEED HEALTH SERVICE

Public health is purchasable, but money alone will not buy it, observed the *Saturday Evening Post* in a recent editorial urging careful organization for effective health service, especially for rural districts.

"The natural advantages which rural sections possess in matters of health are more than offset by the better health protection afforded the city dweller," the editorial continues. "The United States Public Health Service says that in our rural communities there are a million people incapacitated all the time by illness, much of which is preventable; about 70 per cent of the school children are handicapped by physical defects and more than 60 per cent of the people between 40 and 60 are in serious need of physical repair."

Recognition of these facts is resulting in the establishment of full time county health units. In 1911 there were no full time rural health departments in the United States, while on Jan. 1, 1928, three hundred and thirty county health units were in existence.

Not only greater efficiency but actual financial economy results from a sensible coordination of effort. The great need at present is a pooling of resources to attack the whole complex and interrelated problem of health and disease, concludes the *Post* editorial.

MILK FOR ICE CREAM MUST BE PURE

All milk or cream used in the manufacture of ice cream or other frozen milk products sold in New York state must hereafter be pasteurized either before or after being mixed with other ingredients, according to a new regulation which took effect April 1.

The new measure is designed to prevent epidemics such as the serious outbreak of septic sore throat which occurred a few years ago and which was traced to contaminated milk used in ice cream. The regulation also requires that all containers shall be kept in a sanitary condition and that no persons who are carriers of disease shall be employed in handling ice cream or its ingredients.

In health there is a liberty. Health is the first of all liberties, and happiness gives us the energy which is the basis of health.—*Amiel.*

Health is the second blessing that we mortals are capable of—a blessing that money cannot buy.—*Izaak Walton.*

"Be mama's brave little man"

Hiding under the bed never saved Junior. There was no escape from the noxious dose of old-fashioned castor oil. Today all that is changed—now Juniors are given Kellogg's Tasteless Castor Oil.

Tasteless because it is 100% pure—free from all flavoring, benzyl alcohol, saccharin. Kellogg's is the only refinery-bottled castor oil. This keeps it pure, fresh and wholesome.

KELLOGG'S
The Original
TASTELESS
Castor Oil
THERE IS NO SUBSTITUTE FOR
PURITY

Never sold in bulk but always in the original bottles. 1 oz. (1 dose), 3 oz. and 7 oz. home-size bottles. Send for trial bottle enclosing 10c in stamps.

Tested and Approved 1927 Bureau of Foods, Sanitation and Health

Sold by all druggists.

Walter Janvier, Inc., 121 Varick Street, New York

ENCOURAGE LIP-READING STUDY IN RUSSIA

A Club for Fluent Lip-Readers in Moscow, Russia, has the following set of rules, quoted by Mrs. Anne C. Norris in an article in the *Volta Review* describing a recent visit to Russia:

1. Know that the best aid for deafness is lip-reading.
2. Be active members of our club, come to every meeting, express your opinions freely.
3. Bring a new member to join our club. There should be no hard of hearing who are not members of our club.
4. Study the by-laws of our club; you will know our aims and the rights and duties of a member.
5. Meet new members bravely, give them faith in our success.
6. Don't be afraid to express yourself; use your lips when speaking.
7. Spread in the community the idea of lip-reading.
8. Do not be ashamed to mingle with people since you know lip-reading.
9. Remember lip-reading and organization of the deaf will give us the means to fight for the betterment of our lives.
10. Be brave, gay, decisive, persevering, conquer deafness, don't be conquered by it.

AIR TRAVEL BRINGS NEW HEALTH PROBLEMS

A new day in transportation brings with it new problems. The development of airports is already involving public health questions which ought not to be overlooked in planning for the future, the *Illinois Health Messenger* suggests.

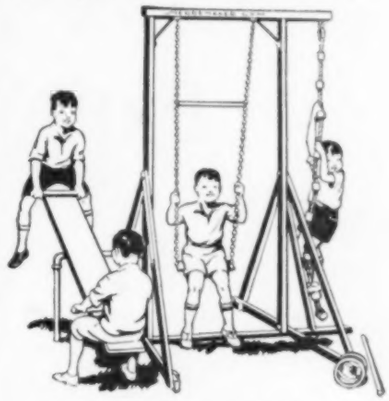
In the past tremendous economic and health losses have occurred because health problems were not considered when populations began to spring up around traffic terminals. Streets have had to be widened, pavements torn up and replaced, whole sewer and water systems abandoned and replaced, valuable property given up and deadly epidemics suffered because plans for city growth did not allow for these things.

Quarantine methods offer a striking example of changes that will be forced by development of airplane travel. The *Messenger* quotes a situation that recently occurred in England. England had been free from rabies for 100 years because of a rigid quarantine system in force at all ports. But she overlooked the airway terminal. An infected dog was brought in by airplane and the disease has spread too rapidly for the existing control machinery.

Health and Happiness for Your Children

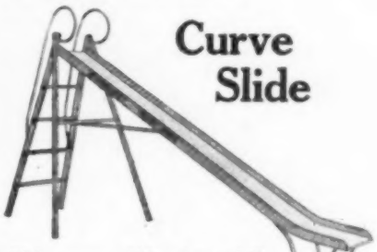
Active play brings sparkling health, rosy cheeks and happy laughter. Children of all ages get just the healthful exercise they need on Merremaker Home Playground Equipment.

Keeps Them Off the Streets



THE TRADE MERREMAKER MARK
6-Play Gym

Fun galore and healthful exercise for several children at the same time. Swing, Trapeze, Flying Rings, Horizontal Bar, Teeter-Totter and Circus Climber all combined in one compact unit. Sturdily constructed to last a lifetime.



Curve Slide

This curve slide gives children of all ages loads of fun and exercise. Specially padded for use indoors as well as outdoors. Big value at exceptionally low price.

Complete Catalog FREE

There are many other wonderful items in the complete line of Merremaker Home Playground Equipment. Send the coupon below for beautiful new 4-color catalog and new, LOW PRICES.

MAIL THIS COUPON TO-DAY!

THE MERREMAKER CORP.,
744—8th St. S. E.,
Minneapolis, Minn.

Please send me FREE your new catalog and LOW PRICES on all Merremaker Home Playground Equipment.

Name.....
Street.....
City..... State..... H. 5-29

HAY FEVER

has been prevented in thousands of cases with

POLLEN ANTIGEN

Introduced by the
LEDERLE ANTITOXIN LABORATORIES
in 1914

Since the introduction of Pollen Antigen Lederle, each year has added evidence to the value of this product in the prevention or relief from symptoms of Hay Fever, and each year an increasing number of physicians have familiarized themselves with the Hay Fever problem and are relieving patients of their seasonal attacks.

LEDERLE ANTITOXIN LABORATORIES where Pollen Antigens were developed in 1914

PROPHYLACTIC TREATMENT

may be commenced as late as two weeks before the date of the expected attack. Fifteen graduated doses of an appropriate Antigen are required. Patients usually suffer little inconvenience from the injections, and many are completely protected from Hay Fever attacks.

Consult Your Physician

LEDERLE ANTITOXIN LABORATORIES
NEW YORK